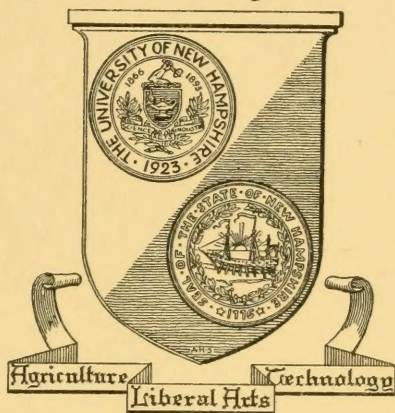
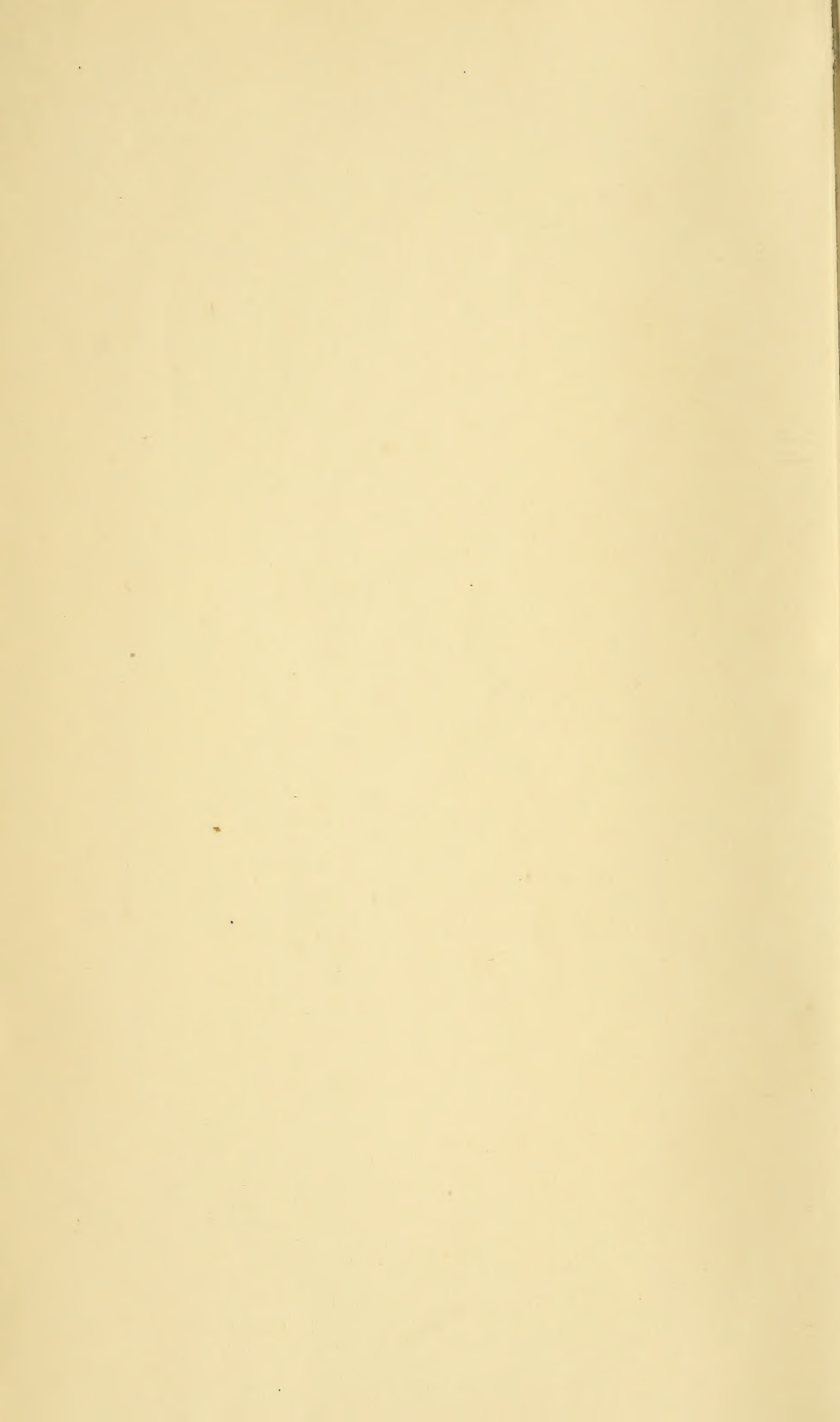


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STATE OF NEW HAMPSHIRE

REPORTS, 1903-1904

VOLUME III—BIENNIAL

CONCORD, N. H.

1904.

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MESSAGE
OF
HIS EXCELLENCY
JOHN McLANE
GOVERNOR OF NEW HAMPSHIRE
TO THE TWO BRANCHES OF
THE LEGISLATURE

JANUARY SESSION
1905

PRINTED AND BOUND BY
THE RUMFORD PRESS
CONCORD, N. H.

GOVERNOR'S MESSAGE.

Gentlemen of the Senate and House of Representatives:

I appreciate to its full extent the high privilege which permits me at this time to welcome you to this Hall of Assembly, dedicated by our state for the use of its legislators in the discharge of the duties imposed upon them. You have been called by the people to perform important duties, the faithful performance of which will require your most earnest and deliberate consideration.

I am deeply impressed with the honor conferred upon me by the people of this state, and shall to the best of my ability discharge the duties of the high office to which I have been elected.

STATE FINANCE.

From the State Treasurer's report for the year ending May 31st, 1904, the following statement of our financial condition is taken:

Abstract of receipts and disbursements.

RECEIPTS.

Cash and cash items on hand June 1, 1903...	\$370,626.06
Total receipts during the year.....	1,327,439.61
	<hr/>
	\$1,698,065.67

DISBURSEMENTS.

Total disbursements during the year.....	\$1,452,843.73
Cash and cash items on hand June 1, 1904..	245,221.94
	<hr/>
	\$1,698,065.67

DEBT.

Liabilities June 1, 1903,.....	\$1,557,148.50
Assets, June 1, 1903.....	904,337.54
<hr/>	
Net indebtedness June 1, 1903.....	\$646,810.96
Liabilities June 1, 1904.....	\$1,432,909.00
Assets, June 1, 1904.....	815,140.03
Net indebtedness June 1, 1904.....	617,768.97
Reduction of debt during the year.....	29,041.99

It is manifest that the present revenue of the state is not sufficient to meet what are called the ordinary and extraordinary expenses,—interest charges and bond payments. Ordinary expenses include salaries and expenses whose payment is authorized by general laws and which are of annual or biennial occurrence. Extraordinary expenses are those which are authorized by special act of the Legislature.

The total ordinary expenses for the year ending May 31, 1904, were \$381,499.44.

The total extraordinary expenses for the year ending May 31, 1904, were \$224,962.86.

Having due regard for the orderly and efficient transaction of the public business slight, if any, reduction in the ordinary expenses of the state can be expected. The pressure upon the Legislature to increase rather than decrease the extraordinary expenses will be great. There will be many propositions brought to your attention calling for appropriations from the state treasury. Each will doubtless have merit; some would be a public benefit, but all mean higher taxes for the people and should be scrutinized with the greatest care.

It appears that a state tax of \$300,000 is not sufficient to meet the expenses. Consequently I recommend that the state tax for the next two years be \$425,000 yearly. As the tax for the next year was fixed at \$300,000 by the last Legislature it will be necessary for you to give this matter

your early attention if the proposition to increase the tax meets with your approval.

NEW SOURCES OF REVENUE.

Under our amended constitution two new sources of revenue are available, namely, a tax on inheritances and a tax on franchises. It is not presumed that a tax on franchises would produce a very large amount of revenue in this state, but a tax on inheritances would, in my opinion, produce considerable revenue without injustice to any one.

There are few states that do not have some form of an inheritance tax. I therefore recommend that a special committee of the House be appointed at an early day, whose duty it will be to consider the question of an inheritance tax and a franchise tax, with instructions to report not later than Feb. 21, 1905.

SAVINGS BANKS.

The savings banks of the state appear to be in excellent condition. There are at the present time under the supervision of the bank commissioners sixty-nine savings banks, twelve banking and trust companies, nine with savings bank departments, and sixteen building and loan associations.

The aggregate resources of the savings banks and savings departments of the banking and trust companies in active operation June 30, 1904, were \$75,695,821.34; an increase over the previous year of \$2,131,610.07. The amount due depositors was \$66,140,710.09; an increase of \$2,221,526.99. The guarantee fund amounts to \$3,698,333.38; an increase of \$176,214.34; and now equals 5.6 per cent. of the deposits as compared with 5.5 per cent. in 1903. The undivided earnings amount to \$1,715,828.93, an increase of \$54,917.86.

The number of depositors is 159,956; an increase of 4,647.

This very handsome increase in the amount of the de-

posits and number of depositors is a pleasant indication of the prosperity and thrift of our people.

The law creating a board of bank commissioners does not provide that one of them shall be chairman of the board. Your attention is also called to the fact that under the law the commissioners have no authority to engage assistance which is sometimes needed on account of sickness or emergencies which require prompt attention. I recommend that the law be amended so as to cover the two points indicated above.

STATE HOSPITAL.

You will be called upon to consider the urgent need of additional buildings to properly care for a large and constantly increasing number of patients desiring admission to the State Hospital.

An act of the Legislature approved March 7, 1903, provides that "The state from and after the first day of January, 1909, shall have the care, control and treatment of all insane persons who are now cared for by the various counties at the county almshouses. That from and after the passage of this act the State Board of Lunacy may order the removal of all such dependent insane persons to the State Hospital for remedial treatment as in their judgment seems proper, and such persons shall be supported at the expense of the state." This act further provides that "After January 1, 1905, as rapidly as accommodations can be provided, the State Board of Lunacy shall begin making transfers from the various county almshouses to the State Hospital of such insane persons as in their judgment seem most suitable."

In furtherance of the purpose of this act the Legislature passed a joint resolution approved March 3, 1903, making an appropriation of sixty thousand dollars for the construction of additions to the Hospital. These were completed about the first of last June and afford accommodations for one hundred and fifty patients. The Hospital

now has about 600 patients and is practically full. Further provisions for the additional patients provided for by the last Legislature is now needed. Plans have been secured and the estimated cost is about \$150,000.

If the proposition to provide additional buildings meets with your approval, I recommend that funds be secured for the purpose by the sale of short-time bonds.

STATE BOARD OF CHARITIES AND CORRECTION.

The general trend of charity legislation in the United States is in the direction of a closer supervision or control of public charities. The movement to extend the scope and modify the terms of public relief giving continues to be noticeable.

There is no work of more vital importance to the state and to society than that which properly comes under the supervision of the State Board of Charities and Correction. They serve without pay; their only reward must come from the consciousness of duty well performed.

The following amendments to Chapter 102, Laws of 1901, which they recommend, should receive your careful consideration.

1. That chapter 102, Laws of 1901, be amended so that the New Hampshire School for the Feeble-minded shall give custodial care to adult feeble-minded women as well as educational care to feeble-minded children.

2. That a separate building for epileptics be erected at the State School for the Feeble-minded.

3. That a separate building for girls be erected at the State Industrial School.

4. That a state workhouse or reformatory be established for the custody of prisoners committed for minor offenses.

5. That juvenile courts and a probation system be established in the state of New Hampshire.

6. That chapter 65, Laws of 1903, be amended by striking out the word "indigent" before the words "deaf and dumb and blind" persons.

7. That section 1, chapter 265, Public Statutes, be amended, making it a penal offense for any man without good cause wilfully to desert, neglect or refuse to support his wife or child or children fifteen years of age or under.

8. That section 8, chapter 91, Laws of 1897, be amended by striking out the phrase, "except the state prison and the asylum for the insane at Concord," so that the section shall read:

"SECT. 8. It shall be the duty of the board to inspect all state and county charitable or correctional institutions and report to the Governor and Council and Legislature biennially the result of their inspection, with a recommendation for such changes in existing laws as in their judgment the public good requires; and shall, on making such inspection, report and recommend to the county commissioners, or such other county or state officers as have the control and management of such institutions, the changes, if any, that said board finds on such inspection should be made in said institutions."

SCHOOL FOR FEEBLE-MINDED CHILDREN.

The New Hampshire School for Feeble-minded Children was opened February 1, 1903, and was quickly filled with sixty-seven inmates, and there is a waiting list of eighty. The need of such an institution is manifest.

In November the main dormitory was burned. Fortunately the fire occurred in the daytime and no lives were lost. You will be called upon to make an appropriation to rebuild, possibly on a larger scale, so that the large number of unfortunates desiring may be admitted. A central heating plant is greatly desired, also better fire protection.

INDUSTRIAL SCHOOL.

This institution has been in existence since 1858, nearly half a century. It is in charge of a superintendent, who manages it under the supervision of a board of seven trustees.

The number of children committed since it was first opened is 2,190, being an average of forty-seven and a fraction each year.

The number of inmates on October 1, 1902, was one hundred and forty-seven. The number on October 1, 1904, was: Girls, thirty-seven, boys, one hundred and forty, in all one hundred and seventy-seven, an increase of thirty.

In addition, there were four others awaiting trial, making one hundred and eighty-one altogether.

For the accommodation of the inmates there is but one building. Under its roof are the school, schoolrooms, store-rooms, sleeping dormitories, kitchen, dining-room, etc.

Including the superintendent, matron, teachers and female employees, there are one hundred and ninety persons who live and sleep in the building. From this it can be seen that the accommodations are entirely inadequate for the number of the occupants, and unless there is a decrease in the number of children committed, which is not probable, measures must be taken in the near future for the enlargement of the main building or, what is still better, the construction of a new one.

The Legislature of 1903 made an appropriation of \$9,000 "for the purpose of building an isolation hospital, a wagon-shed, and making permanent improvements and repairs on the existing buildings." Looking to the future, the trustees put the entire amount into the hospital and have had constructed a substantial structure of brick, resting on a solid granite foundation. It is on the right and in line with the main building, and about six hundred feet distant. It is eighty-five by forty feet and two stories high. It contains four wards, with the necessary closets, bathrooms, attendants' rooms, etc.

It was built by contract. The entire cost was \$8,967.67, or \$32.33 less than the appropriation. This includes steam-heating fixtures, electric-lighting apparatus, etc.

The other improvements called for in the appropriation

were made and paid for from the product of the farm and at an expense of \$2,889.29.

The hosiery plant occupies a wing, one story high, in the rear of the main building and connected with it. For the past two years it has been operated by the superintendent under the direction of the trustees.

In order to replace the machinery owned and operated by the former contractor, the trustees purchased machinery to the amount of \$8,000, hiring the money to pay for it without soliciting aid from the state.

This debt is now nearly paid from the product of the plant. Under this new arrangement there are no persons between the superintendent and the boys but his own employees, which is far more desirable than that in vogue when the work was done by the contractor. It goes without saying that the Industrial School is doing good work and is deserving of the encouragement and sympathy of the people of New Hampshire.

SOLDIERS' HOME.

The New Hampshire Soldiers' Home has been in operation now about fifteen years and has gained a deserved repute as one of the most beneficent institutions of the state.

No body of men better deserve the care and liberal support of the state than the veteran soldiers who have served her faithfully, carried her flag on many battlefields and brought it home unsullied. More than five hundred needy veterans have already been cared for at the Home, of whom one hundred and fifty have died there and had their last days made comfortable.

We have every reason to commend the management of this institution as from the beginning wise, kind, and economical.

It is worthy of a continuance of public favor and should be supported by an appropriation liberal enough to insure its continued usefulness.

NATIONAL GUARD.

The National Guard is organized as a compact and efficient brigade of two twelve-company regiments of infantry, one light battery, a troop of cavalry, a signal corps and hospital corps, with a total strength of 112 officers and 1,266 enlisted men.

The troops are well uniformed and, except in the matter of rifles, are well equipped, there being on hand a complete field equipment for 1,000 men, so that a full regiment could be put into active service at once.

The rifles, with the exception of eight in each company, are old and obsolete. An effort has been made and will be repeated to secure for the state the latest and best rifle, the standard arm of the U. S. Army, as provided by act of Congress.

The drill and discipline of the force is good and improvement is constantly being made from year to year. The interest in rifle and revolver practice is growing stronger and stronger each season and a large per cent. of the men have qualified as "marksmen," "sharpshooters," and "experts."

Taking into consideration the many difficulties with which officers have to contend in the way of lack of proper armories, the National Guard of New Hampshire will compare favorably with that of any state.

Some slight changes in the present state militia law may be necessary in order to conform to the requirements of the militia law of the United States, under which the state is enabled to draw uniforms and equipments from the general government.

FORESTRY.

This important department of our public work has been prudently managed by the forestry commission, to whom credit must be given for the chief advance made by us along the lines of rational forestry. The department as at pres-

ent organized seems to me to be adequate for the work which the state might properly be called upon to undertake under the existing conditions, and I refer you to the commissioners' report for detailed information of the things accomplished and hoped for.

EDUCATION.

Unquestionably the most vital interest of the state at the present time is the education of her future citizens and workers. The very life of the commonwealth, as a free and self-governing community, depends upon the rearing of an honest and intelligent citizenship. The commercial and industrial prosperity of the state depends upon our ability to produce in each generation an ever-increasing mass of intelligent, capable, efficient working and business men.

The state is directly interested in the work of our public school system, in the work of the Normal School at Plymouth, and in the work of the New Hampshire College at Durham. These are all essentially public institutions. I believe the character of the work being done in all is such that our citizens may well take pride in these institutions of the people. They bear a peculiar relation to the state, inasmuch as through them chiefly the state endeavors to open the door of opportunity to boys and girls of small means.

None the less is the state interested in our private schools, the academies and Dartmouth College. Their contribution to the public good is not different in kind from that of the public schools, as they now are, as they always have been, of vast importance in the working out of our plan of education. The academies, under the recent high school law, are becoming more and more the public high schools of the towns round about them and the opportunity thus opened to the children of these towns must be of incalculable benefit to them and to the state.

Recent school legislation has placed upon the statute books four laws of peculiarly beneficent import, the laws for the equalization of school privileges, the high school law, the attendance and employment law, and the law for the encouragement of supervisory districts. Under the first two the state reaffirms the cardinal American principle—that all should have an equal chance in life. Children of the poorer and remoter towns cannot have the same educational chance as those in the wealthier and more populous centers unless the state comes forward with financial support. Under the last of the four laws, the state gives substantial form to its belief in the principle that schools will not ordinarily be efficient unless they are conducted on systematic and progressive lines, and under sound business management.

The fixed appropriations at the bases of these laws should be readjusted at this session. Experience has shown that a surplus tends to accumulate under the supervisory law and a deficit under the high school law. I recommend the passage of an act which will make the application of these annual appropriations more elastic and so better adapted to the end in view. The accumulation referred to should at once be made available for other school purposes.

In the end we cannot have good schools unless we have good teachers. I therefore recommend to your consideration all measures which tend to raise the standard of our teaching force. The profession of teaching should be surrounded with such conditions of compensation and security as to make it attractive to the strongest of our young men and young women. The state should in every way encourage such young persons thoroughly to prepare themselves for the teacher's career. To this end we should in the near future make more adequate provision for the normal training of the graduates of our high schools and academies. The experience of other states leaves little room for doubt that we might have several times as many young women preparing themselves for the office of teacher as we now have,

if there were more and larger normal school facilities within reach of the hundreds of high school graduates of high character and mental power, but of limited means.

DARTMOUTH COLLEGE.

Dartmouth College, under its great president, confers a distinguished honor upon the state. For a century and a quarter the college has served the state by affording our youth the highest liberal education obtainable, a service which many of our sister states obtain only by the erection and maintenance of state universities.

The ground on which the college asks the state for aid is that it costs the college to educate New Hampshire men in attendance a very considerable amount over and above the amount received in return by way of tuition or from the income of scholarships given for New Hampshire students.

The present catalogue shows eight hundred and fifty-seven men in the academic department of the college, of which number two hundred and seventeen are from New Hampshire, the proportion from New Hampshire being a little over one fourth. The treasurer's report shows that the total expenses of the college academic department were a few hundred under \$200,000. The proportionate expense for New Hampshire men would be about \$50,000. The amount received in tuition from New Hampshire men is about \$18,000. To this add the amount received as income from the Second College Grant the past year, \$2,783.83, and from the state fund of 1883, \$250.

The expense of educating New Hampshire students at Dartmouth is very much reduced below what it would cost if the state undertook to carry on a college or university of the grade of Dartmouth for the two hundred or more New Hampshire students. It is, of course, very much more to the advantage of students to be associated with six hundred men from other states than it would to be educated alone, as well as to have the benefit of instruction and equipment which the larger number demands.

It having become the definitely established policy of the state to make substantial appropriation for the benefit of Dartmouth College, I most earnestly hope that the debt we owe to this splendid New Hampshire institution, which has been frankly recognized by successive General Courts, will receive your careful and generous consideration.

AGRICULTURAL COLLEGE.

The New Hampshire College of Agriculture and the Mechanic Arts is a part of the public school system of the state.

It stands in its agricultural, mechanical, engineering, electrical engineering, technical chemistry and general scientific courses in the same relation to the high schools that the high schools stand to the grammar schools, and that these in turn stand to the elementary schools. It is a continuation of the grades of the public school system of the state with special reference to the industrial pursuits. It aims to give a practical training that shall fit the student to deal with the problems of life.

The college receives from the national government about \$45,000 annually and will receive from the Thompson Trust Fund about \$32,000 yearly after 1910.

For the next five years it will be necessary for the state to make such appropriations as you deem wise for current expenses.

The college is required by act of Congress to give instruction in military science and military drill. To assist the college in this work the government loans guns, sabers, swords and other army accoutrement. At the present time there are no suitable rooms in which to store this material. There is no hall large enough for indoor drill during the winter months, nor classroom or office for the professor of military science, who is detailed from the United States Army without cost to the college. This utter lack of facilities for instruction in military science

has been the cause of frequent sharp criticisms from the War Department.

The college is also badly in need of a gymnasium where students may be required to take physical training.

On September 20, 1903, the president's residence was destroyed by fire. Not having college funds available for rebuilding, the trustees accepted the offer of Hon. Walter M. Parker of Manchester to build such a house as the board of trustees directed, at his own private expense, with the agreement that the college should have the privilege of buying it at the actual cost at any time it desired to do so by paying four per cent. interest on the money invested and keeping up the insurance and repairs. The cost of the building was, I understand, about \$5,500.

You will be requested to make appropriations for these several buildings. If, with due regard for the taxpayers of the state, in your judgment it can be done, they will meet with my approval.

AGRICULTURE.

The farmers of New Hampshire share in the prosperity which prevails throughout the country, and in our state, in particular, the State Board of Agriculture has done, and is doing, a very important work in promoting the best interests of the farmers. Agricultural college farmers' institutes and experiment stations are directly traceable to the influence of state boards of agriculture.

The national government now makes an annual appropriation of \$15,000 per year for experiment stations, and a bill now pending before Congress proposes to increase the appropriation to \$30,000.

When we consider the size and importance of the farming industry, we are impressed with the fact that New Hampshire has done little in the way of legislation or appropriation for the great agricultural interests. Of course, the reason why so little has been done is that farmers as a

class are the most intelligent, independent and self-reliant class of our citizens, and yet, because they have not been clamorous for favors in the past is no reason why we should not be liberal in our treatment of their demands now. The Horticultural Society and Dairymen's Association have received very meagre state aid. They are both doing a splendid service to the state and should be treated with the consideration that their great importance demands.

MANUFACTURES.

The manufacturing industries of our state are in a very prosperous condition. Fourteen hundred and fifty-four establishments reporting to the Bureau of Labor for the year 1903 show an increase of production over the previous year amounting in value to \$15,312,402, an increase in the number of wage earners of 1,256, and an increase in the total amount of wages paid of \$2,601,287.

The manufacture of cotton cloth continues to be the leading manufacturing industry.

Twenty-three cotton mills, with a capital of \$23,436,200, produced last year \$34,288,527 worth of cotton cloth, showing the remarkable increase of \$5,595,527 over 1902.

The boot and shoe industry ranks next to cotton in importance. Sixty-one establishments, with a capital of \$5,797,786, employing 12,370 hands, produced last year \$23,870,231 worth of boots and shoes.

There has been a very gratifying increase the past year in nearly all the manufacturing industries of the state, notably in the granite, lumber, machinery, paper and woolen business.

The splendid progress made in all our manufacturing industries could not have been achieved were it not for the amicable relations which exist between capital and labor. There is probably no manufacturing state in the Union where there have been so few strikes, lockouts and shutdowns. It would not seem that laws, under which these

conditions have existed for so long, need radical amendment.

LIQUOR LAWS.

The law entitled, "An act to regulate the traffic in intoxicating liquors," approved March 27, 1903, created a new condition in this state as regards the sale of intoxicating liquors. For nearly fifty years we had on our statute books very stringent prohibitory laws, the practical workings of which had been very unsatisfactory to the friends of temperance and to those people who believe that under certain conditions and restrictions it should be lawful to sell liquor. The present law has been in operation since April 1, 1903, and, while it is probable that it is not perfect in all its details, I am convinced that there are very few who would advocate a return to the conditions that existed prior to the passage of the present law. From the report of the State Board of License Commissioners I quote the following statistics:

"In 1903 there were 57 towns and 11 cities which voted for license. In 1904 there were 47 towns which voted for license, no cities voting. The number of licenses issued in 1903 was 1,085, of which 234 were to druggists. The number of licenses issued in 1904 was 1,017, of which 216 were to druggists. The amount received from licenses in 1903 was \$340,505.29. The amount received from licenses in 1904 (up to December 17) was \$345,752.21. Total amount received from licenses from April 1, 1903, to December 17, 1904, \$726,846.55.

FISH AND GAME LAWS.

The wisdom of our game laws is becoming more evident each year. Deer are more numerous than they have been for a hundred years. Fish are abundant in lakes and streams, furnishing sport to our own citizens and the thousands of visitors who yearly visit our state in search of

health and recreation. Some of the lakes have been screened to prevent the escape of salmon to other waters. There seems to be some question how far we should go in the matter of screening lakes and ponds. I advise conservative action in this direction.

BUREAU OF LABOR.

The Bureau of Labor, which was created for the purpose of obtaining the industrial statistics of the state, has been a very important factor in producing the excellent understanding which exists between capital and labor.

You may find it necessary to make some slight changes in the law to enable the Bureau of Labor to co-operate with the United States Census Bureau in obtaining the industrial statistics of New Hampshire.

PRESERVATION OF THE TOWN RECORDS.

While this state has not been derelict in recent years in the adoption of effective measures for preservation of its archives and the publication of such parts of them as the obligations of the state in this behalf has made advisable, it may be a question whether sufficient attention has been bestowed upon the subject of the due preservation of town records, especially those that cover the early years of the corporate existences of the municipality, and the devising of plans for rendering the contents of these records more available for reference as well as more secure from loss by fire, mutilation, unreasonable wear and tear, obliteration of the text by the natural effects of time, not to mention the more gross forms of vandalism to which all records not properly cared for are constantly exposed. Many complete and many partial sets of town records have been totally consumed by fire; others have been lost by the indifference of the lawful custodians; and still others have been purposely destroyed. The consideration of this subject is respectfully suggested, as the same results that have followed

from conditions existing in the past must be expected to recur in the future unless an effective remedial policy can be discovered and adopted.

ROADS.

No more important question will come before the General Court this session than that of good roads.

For many years it has been the policy of the state to make special appropriations for the improvement of highways in certain sections of the state. The result is that in those counties where most of the money has been used the roads are much better than elsewhere.

I am of the opinion that the time has come when we should adopt a comprehensive plan, which shall be general in its application for the purpose of giving state aid for the improvement of the public highways.

Under the authority of a law passed by the last General Court a state engineer was appointed, who has made very complete maps of our roads. His report, together with the report and recommendations of the Governor and Council, will soon be laid before you, and I have no doubt they will contain valuable information for your guidance.

AUTOMOBILES.

There should be a law regulating the use of automobiles. It should provide that operators be licensed and machines be registered. A reasonable speed limit should be established.

STATE HOUSE IMPROVEMENTS.

The proposed improvements in the state house meet with my unqualified approval. The exhaustive report of Governor Bachelder and his Council, which will soon be in your hands, states the reasons and arguments why this work should be done at once, in a way convincing and unanswerable.

If, after due consideration, you conclude the interests of the state require these improvements to be made, I would recommend that long-time bonds be issued for the purpose of procuring the necessary funds.

CONCLUSION.

In conclusion, I have given you such information concerning the affairs of the state as reasonable limits of time and space will permit.

I trust we are all impressed with the honorable and responsible duties we owe to the people of New Hampshire. From us they will expect, and have a right to expect, a high standard of capacity and integrity. Let us so discharge our duties as to set an example of integrity of purpose and fidelity in action which will bring lasting benefits to the people and be a source of just pride to ourselves.

Conscious of her splendid past and buoyant with hope for her future, let us all work for the honor and glory of the good old state of New Hampshire.



CRAWFORD NOTCH, LOOKING SOUTH.

Photo. by B. W. Kilburn, Littleton.

STATE OF NEW HAMPSHIRE

BIENNIAL REPORT

OF THE

FORESTRY COMMISSION

FOR THE YEARS

1903-1904

CONCORD
NOVEMBER, 1904

PRINTED AND BOUND BY
RUMFORD PRINTING COMPANY
CONCORD

MEMBERS OF THE COMMISSION.

HENRY O. KENT, Lancaster, *President*.

GEORGE E. BALES, Wilton.

MARSHALL C. WENTWORTH, Jackson.

GEORGE H. MOSES, Concord, *Secretary*.

REPORT.

To His Excellency the Governor and the Honorable Council:

In presenting the report of work in their department during the past biennial term, the Forestry Commissioners again take occasion to call attention to the remarkably rapid spread of public interest in forestry in our state. The movement, which a few years since seemed entirely confined to theorists and sentimentalists, now commands the attention of the most practical and conservative of our people, a fact which is in strict corroboration of the sentiments expressed by this board in one of its earliest declarations, wherein it was predicted that the sentimental side of the forestry movement could not fail soon to be entirely overshadowed by the practical aspects involved in every discussion of the question.

FORESTS GROW TO BE USED.

There are, of course, not lacking many whose interest in forestry still is, and from the very nature of the case must always remain, wholly sentimental; this class of forestry advocates being, naturally, found chiefly among those who seek New Hampshire for a brief period each summer during the vacation season. But even these are cognizant of the great fundamental fact of forestry, that forests grow to be used; and while they may continue to decry any timber cutting in certain isolated locations, they nevertheless realize the necessity for utilizing the timber crop to its utmost.

The agencies which we have referred to in previous reports as being most important in carrying forward the

agitation of true forestry in New Hampshire, have lost none of their interest in the subject, and to the Order of Patrons of Husbandry, the Woman's Clubs, the boards of trade, the Appalachian Mountain Club and the Society for the Protection of New Hampshire Forests, all true friends of forestry in this state are under renewed obligations.

THE WORK OF THE COMMISSION.

Investigation into physical conditions of the forest problem has been considerably extended since our last report. We have examined more closely and with added intelligence in some sections; in others we have entered upon new and interesting fields, and the entire forest area of the state, save a few limited localities, has been under our immediate personal observation.

That section of Central and Southwestern New Hampshire, covered by secondary growth, has largely received attention. The incoming of summer residents, occupying places of vantage, has served, in some instances, to change the face of nature and presented new problems for consideration.

We have remarked that a greater percentage of our area was doubtless now under forest cover than at any time during the half century; this conclusion is emphasized in our experience. Where two generations ago were hillside farms of arable land and pasturage are now great spaces of second growth, some sufficiently matured to attract the lumbermen, with stone walls of former fields and pastures curiously out of place among the heavy growth. The droves of cattle from over the Massachusetts border, that annually found luscious sustenance on our mountain grasses, giving an important increment of income to our southern tiers of towns, have vanished and sites of many rugged farms are now valuable chiefly for their lumber and forest cover; for their scenic beauty and health-giving attractions. Rockingham, Hillsborough, Cheshire and Sullivan counties

abound in instances of such metamorphoses. The incoming of summer and of more permanent visitors seeking restful homes amid these haunts of nature, changing the utilities of desirable locations, alters also their income and makes very practical the question of forest protection outside of lumber values alone, as a source of revenue to the state. Many neglected hillsides and forest slopes are now valuable for their scenic perfections. With new colonies, such spots are yearly yielding better returns upon the investment in them than those in the days of elemental agriculture.

From this condition comes effort for development and for checking devastation through the establishment of parks under state laws, several of which have been projected: one of the new questions demanding attention of the commission.

FORESTRY LEGISLATION OF 1903.

The Legislature of 1903 enacted important laws relative to forestry. It perfected existing law; declared for the establishment of a National Park in the White Mountain region; for tree protection and culture; and for the survey of a large section of the state as preliminary to active work for the actual setting aside of lands for a park system.

The sum of \$5,000 was appropriated and placed at the disposal of the commission, so much thereof to be used as should be thought necessary upon conference with the governor and council for an actual field survey of that great forest section in the counties of Coös, Grafton and Carroll, ascertaining its hydrographic possibilities, the density, character and growth of timber, the trend of streams, rainfall and elemental facts essential to an intelligent consideration of the problem. The work of the survey was to be done under the direction of this commission by employees of the United States Bureau of Forestry at Washington. The text of the law is as follows:

CHAPTER 139, LAWS OF 1903.

JOINT RESOLUTION TO PROVIDE FOR A FOREST EXAMINATION OF THE
WHITE MOUNTAIN REGION.

Resolved by the Senate and House of Representatives in General Court convened:

That the forestry commission be and hereby is authorized and directed to procure, upon terms to be approved by the governor and council, a general examination of the forest lands of the White Mountain region by employees of the bureau of forestry in the department of agriculture at Washington, whose report shall be laid before the next session of the general court; and the governor is hereby empowered to draw his warrant for a sum not exceeding five thousand dollars upon any money in the treasury not otherwise appropriated to meet the expense of such examination.

[Approved February 24, 1903.]

THE WORK OF THE SURVEY.

Soon after the adjournment of the Legislature and in April, the commission was in conference with the forestry bureau at Washington and preliminary plans were adopted. Immediately on its return the scheme was presented to His Excellency the Governor. It was determined to begin the field work as early as the condition of the ground in the deep woods, then heavy from the winter's snows, would admit, and in fact the work did commence early in May. The devastating fires of June following impeded, but it was steadily continued until autumn. Mr. A. K. Chittenden of the forestry bureau was the officer in charge, with experts in the several branches to which enquiries were directed. The parties numbered a dozen different people, whose work covered the ground from the Canadian border south to the north parallel of Lake Winnepesaukee, save only the alluvial towns in the Connecticut valley. During the progress of the survey the commissioners were in constant communication and frequent contact with the working parties in the woods. Mr. Chittenden, whose report

is incorporated herewith, proved to be an accomplished director of the task in hand, securing excellent results. Of the \$5,000 set aside by the state for the purpose named, \$2,000 still remains unexpended. Something less than \$3,000 has been expended in the survey itself and accompanying observations.

Observations still continue as to stream flow and other essential data. The expense of this work is borne jointly by the state and the federal treasuries through an arrangement with the Bureau of Hydrography in the United States Geological Survey. By the terms of this arrangement an equal amount of money to that furnished by New Hampshire is spent by the Geological Survey in the accomplishment of this joint work.

The state has received consideration and generous treatment from the Department of Agriculture, and it is reasonably certain that should the Legislature authorize further expenditures along the same line to secure a like survey with attendant maps of the entire state, like assistance would be continued in its accomplishment.

The commission regards the reports of Mr. Chittenden from the forestry bureau, here presented, as of exceeding value, and earnestly recommends a continuance of the work to embrace, under like conditions, the remaining part of the state.

FINANCIAL STATEMENT.

Appended is a brief summary relative to the \$5,000 appropriation indicated, the expenditure therefrom, and the amount yet available:

Appropriation by state for use of forest survey	\$5,000.00
Paid over to Forestry Commission:	
May 14, 1903, by state treasurer	\$1,500.00
Aug. 19, 1903, by state treasurer	2,500.00
	<hr/>
	4,000.00
Undrawn and in state treasury	. . \$1,000.00

Drawn by commission from treasury . . .	\$4,000.00
Expended in survey proper by A. K. Chittenden	\$2,229.82
Expended on hydrographic work since close of survey proper, as arranged with bureau of forestry and Chittenden (the U. S. pay- ing an equal sum to voucher No. 41 inclusive)	562.15
	<hr/> 2,791.97
Balance unexpended	\$1,208.03
To which may be added balance of the appro- priation intact in treasury	1,000.00
	<hr/> \$2,208.03

This balance may be somewhat lessened at final settlement, as the commission is still meeting the expenses of hydrographic observations; thus all commission expenses may equal but not exceed \$3,000.

Our financial arrangements have been very simple. The president of the board consented to act as disbursing officer. All expenses were incurred by Mr. Chittenden of the forestry bureau of the Department of Agriculture. A sum was placed at his disposal on the order of the forestry bureau at Washington to be checked out by the head of the working force in the field as needed. All vouchers submitted to and approved at Washington were certified to this board and, thus verified, charged off against the appropriation. The preceding statement exhibits an analysis of the appropriation, the amount paid to the commission, the expenditures and the funds available for future work. It will be seen that something less than one half the appropriation presumed necessary was expended in the work of the survey proper, while, with the collection of a mass of essential hydrographic and other data, the entire expenditure for the two years' work has been less than \$3,000.

FIELD INSPECTIONS BY THE BOARD.

In July, 1903, a comprehensive trip to the region later covered by Mr. Chittenden's survey was made by the entire board and in connection with him, punctuated by frequent consultations and decisions as to pending operations. The Connecticut Lake region, the Diamond Pond waters, Dixville Notch, at the north, were considered. We noted the great benefit of the state roads through Dixville, together with the increase of traffic from Colebrook on the Upper Coös Railroad, through that gorge to the Androscoggin and Magalloway waters with their chain of lumber camps, which has been made possible, more expeditious and less expensive by this route through the once almost impassable desolation of the Dixville chasm; and we observed the added thrift of the region consequent upon these improvements. Passing the Crawford Notch to Jackson, to the lower and eastern side of the Presidential Range, policy and route, camps and plans were determined for practical work.

In October of the same year the commission again visited Corbin Park, taking up matters left over from a previous visit, crossed the ridge to Cornish Flat, proceeding down through the attractive summer colonies in Plainfield and Cornish, that for several years have enrolled notable artists, authors and men of affairs among the votaries of these lovely reaches of the mid-Connecticut valley, along the base of Mount Ascutney, just across in Windsor county, Vermont.

Thence we proceeded through the broadening reaches of the great intervalles in Claremont, Charlestown (old No. 4), Walpole, to Bellows Falls, climbing up and through the Cold River Valley and over the divide to the Ashuelot waters at Keene, a section beautiful for situation, thrifty in development and, of later years, by its added railroad facilities, so connected with Central and Eastern New Hampshire as to strengthen its prosperity.

To the southwest reaches the Ashuelot Valley, touching Vermont at South Vernon and Massachusetts at Hinsdale, its streams weary with the labor of productive industry; to the southeast the higher lands lead up through Troy and Fitzwilliam to where Monadnock dominates the landscape and the evidences of summer congregations crown every elevation.

THE RHODODENDRON GROVE.

Our special desire was an examination of the remarkable and isolated grove of rhododendrons in the borders of Fitzwilliam, six miles from Troy. This grove, donated by Miss Mary L. Ware to the Appalachian Mountain Club, for public enjoyment, is in a depression among the hills and in a second growth of sapling pines, which were being logged when the grove was secured for preservation. The growth is perhaps five acres in area, of luxuriant beauty, its glossy leaves and magnificent blossoms unique in rich splendor. It is presumed that the present unsightly and dangerous undergrowth and débris will be cleared and the growth protected and made more accessible. With such attention this grove will be known as one of the most attractive and valuable of the state's public reservations.

Skirting the northeastern shoulder of Monadnock, we observe numerous establishments in Dublin, a summer colony celebrated for cultivated expenditure in grounds and mansion houses, crowning points of vantage on the mountain itself, embowered in preserved forests or, as perhaps the culmination, situate on the shores of the beautiful sheet of water at the mountain's northerly base, where are estates exceeding in cultivated surroundings and artistic completeness perhaps any others of like character in New Hampshire.

The village of Dublin and the several Jaffreys are of great altitude, some surpassing Bethlehem and Jefferson in our northern country. Five miles easterly of Lake Monadnock is the ancient and self-poised town of Peter-

borough, thrifty in manufacturing, prosperous in business, interesting from its historic associations and notable children. Cradled between the two Monadnocks it attracts those favored by fortune and lovers of the peacefully beautiful, who have covered its rounded hills with delightful estates.

Going down the decline through the Souhegan watershed, we stop in passing to ascend the notable mountain, Pack Monadnock, its summit accessible by a carriage road and adorned by an abandoned hostelry. This elevation is 2,100 feet, the view unique, affording a key to the topography of a large area. The summit is bare of vegetation, looking out over concentric chains of hills that ring the landscape. The eye easily follows the highlands and winding valleys, disclosing field and forest with the regularity of a map. The growth in this region is all secondary, mostly pine, and again we note the extent of the forest cover, even where the primal growth has disappeared.

Pack Monadnock is a state reservation, or at least a considerable acreage on its summit is so preserved, "Miller Park" being its official name, christened for the doughty Gen. James Miller, hero of Lundy's Lane, who said that he would try to take that battery and, trying, succeeded, proving to the doubter who questioned his ability that the result was certain as at the time he "had the written order in his pocket!"

Resting at the thriving village of Wilton and riding among its interesting surroundings of wooded growth, manufacturing plants and fine estates, we continued toward the sea through the fertile farm lands of Milford, where the commission, after viewing its prosperity, were entertained by the notables of the place, alive to learn its mission and anxious to protect the trees whose grateful shade made beautiful the roadways, showing with recurrent regularity the disks, "N. H.," to the eye; thence down to the Merrimack and the Capital.

A NEW DEPARTURE.

The law of 1893, establishing the Forestry Commission, among its other provisions enumerated that:

SECT. 4. Whenever any person or persons shall supply the necessary funds therefor, so that no cost or expenses shall accrue to the state, the Forestry Commission is hereby authorized to buy any tract of land and devote the same to the purposes of a public park. If they cannot agree with the owners thereof as to the price, they may condemn the same under the powers of eminent domain, and the value shall be determined as in the case of lands taken for highways, with the same rights of appeal and jury trial. On the payment of the value as finally determined, the land so taken shall be vested in the state and forever held for the purposes of a public park. The persons furnishing the money to buy such land shall be at liberty to lay out such roads and paths on the land, and otherwise improve the same under the direction of the Forestry Commission, and the tract shall at all times be open to the use of the public.

SECT. 5. It shall be the duty of the Forestry Commission to make such rules and regulations as may be required to protect and preserve all lands which are required by the state under the provisions of Section 4 from injury or disfigurement, all said rules and regulations to be posted upon said property and at two public places in the town or towns in which any part of such land may be located.

SECT. 6. If any person shall violate any such rule or regulation of the Forestry Commission, he shall be fined not exceeding twenty dollars or be imprisoned not exceeding six months.

For ten years thereafter this law was not invoked. In the autumn of 1903 Dr. L. Vernon Briggs of Boston, a summer resident of the town of Hancock in Hillsborough county, petitioned the commission for the purchase or condemnation of a tract of land to be used, under the terms of the statute, for a public park.

The spot in question was known as Juggernaut Pond, with a strip of land surrounding. The area specified comprehended about eighty acres, of which about twenty acres was the pond, the balance the steep hillside, beneath which the little town was sequestered. It lies per-

haps two miles from Hancock village and at an elevation of 1,100 feet above tide water and was known to some degree as a resort of picnickers, but of late had acquired a neighborhood of residents from out the state who had erected and who proposed to erect summer houses, drawn thither by the secluded and wild beauties of the pond and surroundings.

The growth was largely pine, some of considerable size. The landowners had *permitted* contractors and operations had commenced. The case involved the presumed policy of the state in presenting scenic attractions to proposed residents and placing a check in possible or necessary cases upon a spirit of speculation that might seek control of desirable forest spots, especially in Southwestern New Hampshire.

A hearing was had upon the petition at Hancock, December 22, 1903, the petitioner being represented by counsel, James F. Brennan, Esq., of Peterborough, and the landowners by the Hon. Charles H. Burns of Wilton. After hearing evidence and arguments and viewing the premises, the board issued the following order:

STATE OF NEW HAMPSHIRE.

IN BOARD OF FORESTRY COMMISSIONERS.

In the matter of the petition of L. Vernon Briggs for the condemnation of a strip of land five hundred feet in width upon the shore line of Juggernaut Pond, so called, in the town of Hancock, the board, having given a hearing upon the same, at which all parties in interest were present with counsel, to wit, at said Hancock, on the twenty-second day of December, 1903, is of the opinion that the taking of the described land for the purposes of a public park would be for the public good; and therefore decides that the prayer of said petition be granted, unless the board is able to agree with the owners of the said land as to the price thereof.

By vote of the board, Commissioner George E. Bales is authorized to negotiate for the purchase of said land as provided by statute.

It is ordered that the petitioner forthwith file with the board a bond to the state of New Hampshire, with sufficient sureties, in the sum of Five Thousand Dollars for the carrying out of the intent of his petition and this order thereon.

HENRY O. KENT,
GEO. E. BALES,
GEO. H. MOSES,

Forestry Commissioners.

Hancock, N. H., December 22, 1903.

The petitioner promptly complied with the order of the board, and Commissioner Bales proceeded to negotiate for the purchase of the land in question. All his attempts failing, the matter was carried to the board of selectmen of Hancock on a petition for an assessment of damages, and a hearing was set for Monday, October 17, 1904.

The counsel for the landowners had previously suggested their desire to have a case agreed upon in order that the supreme court might pass upon the question of the constitutionality of the statute, to which both the petitioner and the commission agreed; and in order to formulate such a case it had been arranged that an injunction should be issued, forbidding the landowners removing any timber from the designated area. Upon this injunction the case was to be taken to the supreme court. Without waiting for the procuring of the injunction, although a petition had been drawn and was in the hands of the court, the owner of the timber growth, presumably by advice of his counsel, entered upon the tract and partially denuded it, ceasing only upon the service of the injunction. This course the commission deemed to be a violation of good faith, although it had no remedy which it could apply. It is probable that the case will now be agreed upon and go to the supreme court for an early hearing.



PROPOSED MONADNOCK RESERVATION.

RESERVATION ON MOUNT MONADNOCK.

Mount Monadnock rises in Southwestern New Hampshire, largely in the towns of Dublin and Jaffrey, to an elevation of 3,100 feet. On its western and northern slopes are colonies of summer residents and visitors. On the west slope, toward Troy and Fitzwilliam, the mountain presents a dome of rock, grand in outline. On the eastern slope, in Jaffrey, the forests extend further up the slope, indeed nearly to its precipitous crest, which crest was purchased in 1883 by the town of Jaffrey as a reservation, the first, it is understood, thus established in the state.

On this eastern slope, well up toward the ledges, quite a growth of timber—spruce and hardwood—had replaced the old fields and pastures, whereof the stone wall boundaries reach out through close woods. The timber on part of this slope had been sold for lumber and portable mills had been at work to strip the mountain side. Great interest was manifested by summer residents and owners of property occupied for summer purposes. To prevent further cutting, the remaining timber on part of the mountain side was purchased. These purchasers, alleging that further protection was demanded for the public good, in the summer of 1904 petitioned the commission to set apart about five hundred acres, under the statute, as a public park. Preliminaries having been complied with, a hearing was held by the full board at Jaffrey Center, September 21. The petitioners and all parties in interest appeared by counsel, when an exhaustive and prolonged hearing was holden, followed by an actual view and inspection by the commission of the tract in question.

The decision of the board being unanimously in favor of granting the prayer of the petition, the following order was made:

STATE OF NEW HAMPSHIRE.

IN BOARD OF FORESTRY COMMISSIONERS.

In the matter of the petition of Isaac Sprague, Louis Cabot, Joel H. Pool and Arthur E. Pool for the purchase or condemnation of certain adjoining described tracts of land, containing five hundred acres, more or less, at the base of Monadnock Mountain, in the town of Jaffrey, in the county of Cheshire, the same to be devoted to the purpose of a public park as the statute provides.

The board having given a hearing upon the same, at which the parties in interest were present with counsel, to wit, at said Jaffrey, on the 21st day of September, 1904, is of the opinion that the taking of the described lands for the purpose of a public park would be for the public good, and, therefore, decides that the prayer of said petition be granted.

By vote of the board, Commissioner George H. Moses is authorized to negotiate for the purchase of said lands as provided by statute.

It is ordered that the petitioners forthwith file with the board a bond to the state of New Hampshire, with sufficient sureties, in the sum of eight thousand dollars (\$8,000) for the carrying out of the intent of the petition and this decision thereon.

HENRY O. KENT,
M. C. WENTWORTH,
GEO. H. MOSES,
GEO. E. BALES,
Forestry Commissioners.

Concord, N. H., September 24, 1904.

Negotiations for the purchase of this tract are now in progress, under the terms of the commissioners' order. Elsewhere in this report will be found a map showing the reservation at Juggernaut Pond in Hancock and a photograph indicating approximately the location, size and

character of the tract on Mount Monadnock. Of this latter tract it is competent to say here that it adjoins the reservation, already referred to, of 200 acres on the summit of Mount Monadnock set aside by purchase by the town of Jaffrey more than twenty years ago for a public park.

A TOUR OF THE WOODS.

During the summer of 1904, deeming it desirable—because of pending national legislation to which more extended reference will be made later in this report—the commission invited the members of the state congressional delegation to accompany the board on a tour of the main portion of our grand North Woods; and was so fortunate as to secure Senator Burnham and Congressman Currier therefor, Senator Gallinger and Congressman Sulloway being held by engagements from joining the party. By reason of his early and abiding interest in the forestry problem and his intimate knowledge of the region, we were glad to include ex-Governor Jordan in our number.

The area visited embraced the head waters of the Connecticut, the First, Second and Third Lakes in Pittsburg, and the waters of the Diamond, the main tributary of the Magalloway, itself the chief feeder of the Androscoggin, both being in the great north forest, stretching from the Canadian border south to Dixville Notch; also including the forest area between the Androscoggin at Errol, Dummer and Milan to the alluvial lands on the Upper Ammonoosuc and Connecticut. In this area are the Diamond Ponds, becoming a notable resort for fishermen and tourists; Dixville Notch with its lakes, cascades, the profile, the remarkable state road through the gorge to the Androscoggin, five miles below its outlet from Umbagog Lake, and the new road opened by Mr. Hale of The Balsams to Millsfield Ponds, two miles back from the river and 28 miles above Berlin.

The route of this trip proceeded thence down the Con-

necticut Valley to Lancaster; up the valley of the Israel's and Ammonoosuc Rivers to Fabyans and Bretton Woods, having passed over portions of the new state roads around the western base of the great range and affording an opportunity to observe the young nursery of forest trees near the Mount Washington Hotel, started by the enterprising manager of that caravansary. Here the night was spent, with a consultation with His Excellency Governor Bachelder, who joined us there for our further progress. The next day we passed through Crawford Notch, observing the source of the Saco, its affluents and forests, as far as Jackson, one of the most famous of summer resorts. Here we were driven over the excellent roads among the hills, noting the added erections of residences and the growth of attendant business.

The next day the party separated, some going over the railroads down the Pemigewasset and Merrimack Valleys, the remainder continuing along the Saco to North Conway, there taking rail south to the country of the Cochecho and Piscataqua.

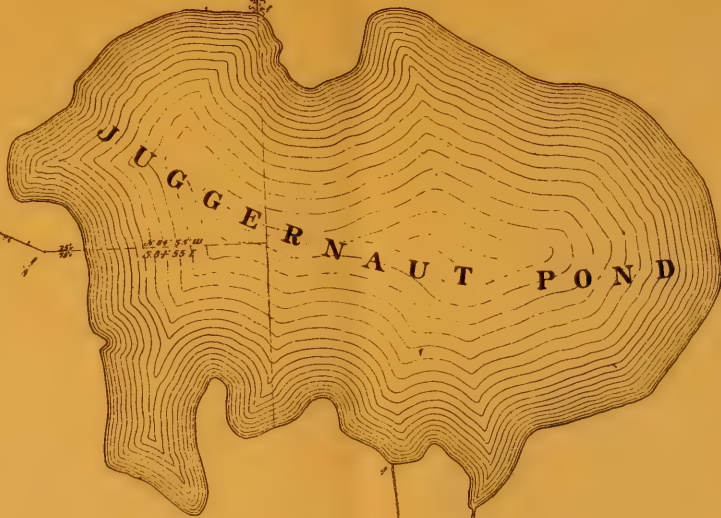
Through the medium of this trip a degree of familiarity with the region was acquired and a knowledge of actual conditions obtained relative to the legislation referred to, not attainable save through actual observation.

We do not deem it irrelevant to comment upon the marked improvement in the highways of the North Country, both in extent and excellence, so far as to the remote Second Connecticut Lake; to Diamond Ponds; through the gorge at Dixville; to the Androscoggin at Errol; down the river to Berlin; along the Connecticut valley; over the highlands of Jefferson and Carroll to Bretton Woods; through the Crawford Notch; through the Jefferson Notch; from Fabyan to the Twin and Crawford's and around Jackson. The roads are broad, dry and smooth, fitted for any vehicle and superior to the average road in Central or Southern New Hampshire.

E. Vernon Briggs



Addison C. Ware



Joseph A. Tarbell

*Proposed
Forest Reserve
at
Juggernaut Pond
Hancock, N.H.*

*Scale 100 ft to the inch Surveyed Jan 17th & 18th 1904
Oloyd & Mann
Civil Engineers*

THE TREE WARDEN LAW.

The Tree Warden law, first passed in 1895 and radically amended in 1901, was a measure which, in its practical operation, proved of great benefit, inasmuch as through its agency it had been made possible to preserve from destruction or mutilation more than 400,000 shade trees growing by our roadsides. The tree wardens, a list of whom is appended to this report, were, for the most part, the "discreet persons" whom the law specified they should be, and their work was done with much care in most of the towns.

In some places, however, there was opposition to the marking of shade trees for preservation, but in only one case were the legal remedies provided by statute resorted to. In the town of Hinsdale, certain trees, which had been designated by the tree wardens for preservation, were cut by the abutting owners and action was brought against them under the terms of the statute. The case being agreed upon, the proceedings were removed to the supreme court, and at the March term, 1904, the following opinion was handed down by Mr. Justice Walker:

No. 313 Cheshire.

BIGELOW & *a. v.* WHITCOMB & *a.*

Debt, by the tree wardens of the town of Hinsdale, to recover a forfeiture for cutting certain trees within the laid-out limits of a highway in the town, which had been designated by the plaintiffs in the manner required by the law for the purpose of shade and ornamentation. The defendants who owned the adjoining land pleaded title in the trees. Facts found by a referee. The case was transferred from the October term, 1903, of the superior court by Pike, J.

In January, 1902, the plaintiffs designated the trees in question for shade and ornamentation as provided in chapter 98, Laws of 1901. No compensation was tendered to

the defendants by the plaintiffs for the trees. In the following March the defendants cut down the trees.

John E. Allen, Charles H. Hersey and Streeter & Hollis for the plaintiffs.

Cain & Benton and John M. Mitchell for the defendants.

Walker, J. This action is brought under chapter 98, Laws 1901, relating to the protection and preservation of ornamental and shade trees in highways. It provides (s. 1) that one or more tree wardens shall be appointed by the mayors of cities and the selectmen of towns; (s. 2) that "Towns and cities shall have control of all shade and ornamental trees situated in any public way or ground within their limits, which the tree warden deems reasonably necessary for the purpose of shade and ornamentation; and it shall be the duty of the tree wardens, as soon as possible after their appointment, to carefully examine the trees, situated as aforesaid, and to plainly mark such trees as they think should be controlled by their municipality, for the purposes aforesaid, by driving into each tree, at a point not less than three nor more than six feet from the ground on the side toward the highway, a nail or spike, with the letters 'N. H.' cut or cast upon the head. * * * They shall also have the power to designate from time to time, in the manner as hereinbefore directed, such other trees within the limits of the public ways and grounds as in his (their) judgment should be preserved for ornament or shade;" (s. 3) that "If any of the trees designated as aforesaid should prove to be private property, and the owners thereof refused to release or convey their interest therein to the municipality, the tree warden shall acquire them for the use of the city or town, by purchase, if it can be done at a fair price. Failing in this he may, on petition for that purpose, acquire them in the same way and manner and with the same right of appeal to their owners as in the case of land taken for a highway;" (s. 4) that towns and cities may appropriate money "to be used by the tree warden in planting, pruning, protecting and,

whenever necessary, acquiring shade and ornamental trees within the limits of their public ways and grounds;" (s. 5) that such trees shall not be removed except after a public hearing, etc.; (s. 6) that "It shall be unlawful to cut, destroy, injure, deface, or break any public shade or ornamental tree * * *"; and (s. 8) that "Persons violating any of the provisions of this act shall forfeit not less than five nor more than one hundred dollars to be recovered in an action of debt by the tree warden * * *."

It is apparent that the Legislature in enacting this statute recognized that there might be a private ownership in trees located within the limits of highways, and provided the means by which such private ownership might be legally terminated by the public upon due compensation therefor. *McCarthy v. Boston*, 135 Mass. 197, 200. No attempt is made to authorize the warden to appropriate trees standing in the highway, without a hearing and compensation, unless they are public property. Private property in such trees, when it exists, is fully protected. Hence the question in this case is, not whether the statute is constitutional but whether the plaintiffs, as tree wardens, have observed the statute in attempting to appropriate the trees in question to the public use of shade and ornamentation. Their proceedings in the premises have been based entirely upon the theory that the trees were not private property and that the defendants had no legal rights thereto; in other words, that the trees were public property, for the greater protection and preservation of which it was only necessary that they should be marked in the prescribed way.

It is assumed, in the absence of a finding to the contrary, that the trees in question stood on the side of a country road and that their ownership was not peculiar, but depended upon the legal effect of the laying out of ancient highways upon the property rights of the landowner. If, when the highway was laid out, the public acquired the right, not only to construct and maintain a road over the land and to pass and repass thereon, but the right to de-

prive the landowner of the natural growth upon the side of the traveled path whenever a later public sentiment might require it for ornamentation or comfort, the landowner's title to such growth is not an absolute one, and the public may terminate his limited and qualified right at pleasure and without further compensation. And it is the plaintiff's contention that from the time when the highway was laid out, early in the last century, until they marked the trees, as provided in the statute, in 1902, the defendants, or their ancestors in title, might have legally cut down the trees and used the logs and wood for their own purposes, by virtue of their ownership of the adjoining land; but that after the trees were designated by the tree wardens for shade and ornament, their right to appropriate the trees as their property ceased or was in abeyance, by virtue of an original right which was vested in the public when the highway was laid out. This theory might not be inaccurately stated to be that the public acquired the right to use the natural growth of the land, with a permissive right in, or license to, the abutter to use and consume it, until such time as the public might indicate its desire to use it for some highway purpose. On the other hand it is denied that the public acquired any right to the products of the soil, as the grass and trees naturally growing thereon, except to remove them from the ground when necessary for the convenience or safety of public travel over the way; and that so long as they do not constitute an obstruction or menace to travelers, the abutter has an absolute right to have them grow there, and an equally unlimited right to remove them.

It is a general principle, which is not controverted in this case, that, "In highways laid out through the lands of individuals in pursuance of statutes, the public has only an easement, a right of passage; the soil and freehold remain in the individual, whose lands have been taken for that purpose." *Makepeace v. Warden*, 1 N. H. 16. And it was held in that case that if surveyors of highways in

making or repairing roads cut and convert to their own use wood growing thereon, they are trespassers. "The right acquired by the public in a highway legally established for the public use is only an easement, a right of passage over the land. * * * This right consists in the power to make the road and to keep it in repair suitable for travel, and in its free use by the public for all proper purposes, until discontinued. In making or repairing highways, however, nothing can be taken from the land over which they are laid, by the town authorities, for any purposes except the legitimate end of constructing the roads. Everything growing or standing upon the land, the trees, timber, etc., belongs to the owner; and everything that goes to form the land itself also belongs to him, except what is necessary to be actually used in the making or repairing the highway." *Rowe v. Addison*, 34 N. H. 306, 311, 312. See, also, *State v. New Boston*, 11 N. H. 407, 409; *Troy v. Railroad*, 23 N. H. 83, 93; *Blake v. Rich*, 34 N. H. 282; *Graves v. Shattuck*, 35 N. H. 257; *Winchester v. Capron*, 63 N. H. 605; *Bailey v. Sweeney*, 64 N. H. 296; *Jackson v. Hathaway*, 15 Johns. 447, 453; *Perley v. Chandler*, 6 Mass. 454, 456. "The owner of the land, therefore, retains his title in trees, grass, growing crops, buildings and fences standing in the highway at the time of the laying out (unless he fails to remove them within a reasonable time after notice to do so), as well as in mines or quarries beneath, which are not part of the surface of the earth upon and of which the highway is made." *Denniston v. Clark*, 125 Mass. 216, 221. He "owns the trees growing upon it and may maintain trespass against any one cutting them, or gathering their fruit, or for any other invasion of his possession. But of course the proper public guardian of the highway may cut down any tree which is a permanent obstruction to the use by the public of any part of the highway." Jones, Easements, s. 479; *Turner v. Highway Board*, L. R. 9 Eq. 418.

In *Baker v. Shephard*, 24 N. H. 208, it was held that

by the laying out of a highway, the public acquire no right to use the trees growing upon the land to build or repair the road. In the opinion of the court, Judge Bell says (page 215): "The question is, whether the trees growing upon the land laid out for a highway are all to be deemed materials subject to the same rules as sand, gravel, etc., liable to be cut down at the discretion of the agent for building the road, and to be used for the repairs of the road. If they are not, then the question is whether the agent or surveyor has a right to cut down any trees growing in the highway land, except such as it is necessary to cut down and remove for the purpose of building and repairing the road in a reasonable and proper way; and whether the trees properly cut down for this purpose can be deemed materials, and applied, at the pleasure of the agent or surveyor, to the construction or repair of the traveled way." After showing the difficulty of assessing damages occasioned by the acquisition by the public of such rights in trees growing by the side of a highway, he proceeds (page 217): "The appraisal must have been made of the trees as they were. Their increased size and value is derived from their being permitted to occupy and draw their nourishment from the soil of the landowner, to the profits of which, subject to the public easement, he is exclusively entitled. Can the trees be taken and applied to the public use without allowing him anything for their increased value? For how many years may the public leave the trees, in which they are supposed to have a right, to grow upon the highway and then deprive the owner of the profits of his land? It is this circumstance, that the increase of growing timber makes a part of the natural profits of the soil, which marks a clear line of distinction between trees and the inanimate sand and gravel, which are always materials liable to be used upon the highways." And he concludes that the only right the public "acquire in relation to such trees, is that of cutting down and removing to a convenient distance,

for the use of the owner, such trees as it is necessary to remove in order to the making or repair of the road in a proper and reasonable manner. In this conclusion we are supported by the ancient authorities.”

A similar result was reached in *Tucker v. Eldred*, 6 R. I. 404, where it was held that, in opening a new highway or amending an old one, the town sergeant or surveyor may under the law remove growing trees or brushwood from the space appropriated to the highway, but has no right, as included in the original assessment of damages, or the easement of the public, to use such trees or underbrush in the building or amendment of the roadway; and that if he does so use them he becomes a trespasser. In *Suffield v. Hathaway*, 44 Conn. 521, it was held that the selectmen of a town have no right as against the owner of land on the highway to divert the water from a spring on such owner's side of the road to a public watering trough on the other side. The court say “as between the public and the respondent, the owner of the spring, the latter is entitled to any and all uses of it which do not interfere with the public safety, do not obstruct or hinder public travel and do not increase the public burden of making repairs. * * * The right of the owner to the use of the spring under these limitations takes precedence of the right of the officers to divert it to the lands of others, if in so doing their sole motive is to establish a public watering place. Of course, such places afford great relief to man and beast; but, commendable as is the act of establishing them, towns have no right to take private property without compensation for that purpose.” In *Deaton v. County*, 9 Iowa 594, the question arose upon an assessment of damages in the laying out of a highway, the plaintiff claiming that he was entitled to compensation for timber growing in the highway; but the court held that his title to the trees was not divested or affected by the condemnation proceedings. For the same reason it has been held that the public acquire no right to remove

stones embedded in the ground below the grade of a highway and to use them in repairing the road. *Rich v. Minneapolis*, 37 Minn. 423; *Overman v. May*, 35 Iowa 89, 97; *Winter v. Peterson*, 4 Zab. 524; Statute 7, George III, c. 42 s. 3; Statute 13, George III, c. 78, s. 16; *Ib.*, c. 78, s. 27.

On the other hand it was decided in *Felch v. Gilman*, 22 Vt. 38, that the highway officers may use trees growing in the highway in repairing the road; but the reasoning of the court is not so convincing as to warrant a re-examination of the decision in *Baker v. Shephard*, *supra*, or to weaken the force of the numerous authorities to the contrary. *Phifer v. Cox*, 21 Ohio St. 248, 255.

Upon this examination of the authorities the question presented whether in laying out a highway under statutory authority the public acquires a right to prohibit the landowner from removing the trees standing in the highway next to his land, for the purpose of preserving them for shade and ornamentation. If the public cannot deprive the owner of his trees by using them in constructing or repairing the road, can they deprive him of his property right in them by preventing him from cutting them down and using them in such a manner as he sees fit? It is no more a deprivation of his property right to cut down his trees and devote them to the useful and necessary work of road construction, than it is to appropriate them standing for the purpose of shade and ornamentation. An effective prohibition against one's use and enjoyment of his property in a usual and otherwise appropriate manner deprives him of his property, as much as its actual taking or asportation against his will. *Eaton v. Railroad*, 51 N. H. 504, 511, 512. By the act of the plaintiffs, if valid, the defendant's common right to remove the trees is destroyed, his right of user is materially curtailed—and his property is taken. "Before the public can assume to say that a man cannot cut down his own trees, they must have acquired an interest therein by purchase or by the right of eminent domain. To prevent a man from using his property is virtually

taking it from him, to a certain extent; and this cannot be done without compensation." *Lancaster v. Richardson*, 4 Lans. 136, 141. Moreover the additional servitude is imposed upon the owner's land of supporting the trees for a public purpose. Their future growth and nourishment is to be derived from his soil. He is not only deprived of the valuable right to convert the trees into lumber and wood, which may be called the natural profits of the land, but he must allow the trees to remain upon the land and draw their sustenance therefrom. If he desires to cut off the branches of fruit trees standing on his side of the highway (*Stackpole v. Healey*, 16 Mass. 33, 36), for the purpose of grafting them and thus of increasing his income from the land, he is met with the refusal of the public to allow the arboreal symmetry of the road to be thus impaired. He finds that his right of property in the trees is practically superseded by the public right of preserving them for shade or ornament or both.

If such a right was acquired when the road was originally laid out, and if damages were assessed therefor, the statutes authorizing the laying out of highways furnish little convincing evidence in support of that contention. By the act of February 8, 1791, it was enacted, "That at any time hereafter, when there shall be occasion for any new highways or private roads to be laid out in any town or place in this state, the selectmen of such town or place be, and hereby are, empowered, on application made to them, if they see cause, to lay out the same, * * * and, if such road be for the benefit of the town or public, due recompense shall be made by the town to the owners of land through which such road is laid out for all damages such owners sustain thereby." Laws, ed. 1792, p. 278; ed. 1797, p. 309; ed. 1805, p. 328; ed. 1815, p. 385.

The first section of the act of July 3, 1829, is a re-enactment of the first part of the statute above quoted, with some additions not material to the present inquiry, while section two provides "that when the selectmen of any town shall

lay out a highway, they shall make return thereof, in which the way shall be particularly described and the width thereof stated, and shall cause the same to be recorded by the clerk. And such selectmen shall assess the damages thereby sustained by the owners of the land and shall insert in the record the sums so assessed." Laws 1829, c. 52. In R. S., c. 49, s. 13 and in C. S., c. 52, s. 16, the language used is, that "Such selectmen shall assess the damages sustained by each owner of the land required for such highway, and insert the same in their return." In the revision of 1867 it is provided that the selectmen "shall assess the damages sustained by each owner of the land or other property taken for such highway and insert the same in their return." G. S., c. 61, s. 15. This language also occurs in G. L., c. 67, s. 19, and in P. S., c. 67, s. 18. In the highway legislation of the state no attempt appears to have been made to state specifically the property right taken for highways or the elements of the damages sustained by the landowner. But the court has frequently been called upon to define the extent of the power conferred for which damages are assessable and the rights retained by the landowner for which he is not entitled to damages. In 1816 it was decided in *Makepeace v. Warden, supra*, that the public have only a right of passage in highways, that is, an easement only. In 1827 a similar holding was announced in *Avery v. Maxwell*, 4 N. H. 36. The decision in *Baker v. Shephard, supra*, was announced in 1851, to the effect that the public did not acquire, by the laying out of a highway, right to use the timber growing therein for its construction or repair. These decisions, and others of a similar import, give a restricted interpretation to the language of the Legislature authorizing the taking of private property for highway purposes (Angell, Highways, s. 83), and have been recognized by successive Legislatures without any substantial modification. The legislative intention in these respects having been determined so long ago and acted upon for so many years, cannot now be treated as an open ques-

tion. The general principle underlying these decisions seems to be that the landowner was deprived of such rights only and was paid for such rights only as were reasonably necessary for the construction and maintenance of a way for public travel. "The compensation originally paid him for the taking of land for the road was computed upon the basis that the road would be built in a manner suited to the then existing circumstances." *Hinckley v. Franklin*, 69 N. H. 614, 615.

No logical argument in favor of the plaintiff's contention can be drawn from the undoubted fact that upon the laying out of a highway under the statute, the public acquired the right to use the soil within the limits of the way for its construction and repair, and thus to deprive the owner of the profits of the land, which he might otherwise enjoy. As it has been shown in *Titus v. Boston*, 149 Mass. 164, 165, 166, "It has from the earliest times been the practical construction of our laws authorizing land to be taken for public use, that the towns or corporations had the right, as one of the incidents of the taking, to use the gravel or soil of one part of a way for construction of another part * * * ." See also *Denniston v. Clark*, 125 Mass. 216, 222, 223; *New Haven v. Sargent*, 38 Conn. 50. The practically universal understanding and construction of the public right to use the soil of the way, for more than a hundred years, is evidence of great force upon the question whether it was in fact acquired and paid for when the way was laid out; and for a similar reason the fact that, anciently, arboreal shade and ornamentation of rural highways was not deemed a matter of much importance is equally strong evidence that the public, by laying out a highway, did not acquire a right to compel the abutter to suffer his trees to remain for that purpose. The evidence of such an intention is wanting. "The *locus in quo*, although a part of the turnpike road, is the soil and freehold of the plaintiff. He has the exclusive right of property in the land, subject, however, to the easement or rights incident to a public highway; such as the

right of passage over it and the right which the turnpike corporation has to construct a convenient pathway and to keep it always in good repair. To accomplish these purposes the corporation may dig up and remove from place to place, within the limits laid out for the road, any earth, sand and gravel, and may dig and cut up sods and turf; but it by no means follows that the corporation has the right of herbage, which is the exclusive property of the owner of the soil as well as all trees, mines, etc." *Dudley v. Emerson*, 6 Pick. 57, 58; *Bailey v. Sweeney*, 64 N. H. 296; *Cole v. Drew*, 44 Vt. 49.

If the public highway easement for travel and communication authorizes the construction and operation, either on, above or below the road-bed of horse, electric or steam railways, without the consent of the adjacent landowners whose title extends to the center of the way (*Pierce v. Drew*, 136 Mass. 75; *Sears v. Crocker* [Mass.] 69 N. E. 327), it does not follow that a right to appropriate the natural profits of that part of the way which is not actually used for travel, to the public use of ornamentation of rural highways, was originally taken and paid for. The right to use the way for public travel may include the right to use it in all reasonable ways for the convenient accomplishment of that purpose, but it is an unwarranted inference to say that it also includes a right to use property for the æsthetic purpose of highway ornamentation, which had never before been deemed a constituent part of the road for travel and which could not even be used in repairing the road-bed. *Johnson v. Railroad*, 35 N. H. 569, 572. The kind of vehicles the public use in passing over the way may not determine the question of the right of passage—the right under the easement may justify the use of many modes of conveyance, of which the men who laid out the way had not, and could not have had, the slightest conception. But property, like trees standing in the highway, which had no useful connection with the public passage over the way, and which when constituting an obstruction to such pas-

sage was necessarily removed as a nuisance, cannot be deemed to have been taken at the laying out of the road. If it had been taken and used for some public highway purpose, it may be it could have been subsequently used for a somewhat different public purpose. Trees and herbage in the highway which do not interfere with, or obstruct, the public use of the road and which are the natural profits of the unused land, were not taken because they were not needed for highway purposes. Hence they cannot now be used by the public without compensation to the owner. 3 Kent, Com. 433; *State v. New Boston*, 11 N. H. 407, 409; *Perley v. Chandler*, 6 Mass. 454, 456; *Overman v. Way*, 35 Iowa, 89, 97; *Woodruff v. Neal*, 26 Conn. 165.

The idea of providing for the shade and ornamentation of highways is of comparatively modern origin. It does not seem to have commanded the attention of the people in the early part of the last century. In 1858, the mayor and aldermen of Portsmouth were "authorized to set out and maintain trees and shrubbery on public squares and highways at the expense of the city." (Laws 1858, c. 2,128, s. 1) and the next year similar authority was conferred on the mayor and aldermen of Dover. Laws 1859, c. 2,258. In 1861 a general statute was passed for the preservation and protection of shade trees, which provided (s. 1) "That any town or city shall have full control of the shade trees situated within the limits of any public street or highway in, or passing through any town or city; and shall have full power to make such laws, from time to time, as may be deemed necessary for the protection and preservation of the same"; (s. 2) "If the owners of real estate in any town or city shall desire to remove any shade tree or trees, situate between the carriage path and sidewalk, or within the limits of any public street, he shall obtain leave of the selectmen of the town or mayor and aldermen of the city wherein the trees may be located, or conform to laws which the town or city may have provided relative to shade trees;" (s. 3) "Nothing in the foregoing shall be

construed to debar the owner of real estate to plant, rear and protect any tree or trees between the carriage path and sidewalk in any public street or highway on which his estate is situate, if it do not interfere with the public travel." Laws 1861, c. 2,502; G. S., c. 34, ss. 9, 10, 11. It will be observed that these provisions recognize the property right of the abutter in the shade trees in the highway, subjecting them merely to certain regulations as to their removal. No attempt was made to deprive him of his ownership of the trees. By section 6, chapter 1, Laws 1868, towns were authorized to raise money for the planting of shade trees, and in 1875 such an abatement of taxes was authorized "to any person who shall set out and protect shade trees by any street or highway adjoining his land, as the said mayor and aldermen or selectmen shall deem just and equitable." Laws 1875, c. 39, s. 2; G. L., c. 37, ss. 9, 10, 11; Laws 1889, c. 82. These statutes were embodied in P. S., c. 40, ss. 4, 9, 10, 11, without any material change. In 1895 it was enacted that the mayor and aldermen of cities and the selectmen of towns be authorized "to designate and preserve trees standing and growing in the limits of highways for the purpose of shade or ornament," and that "whoever shall wantonly or intentionally injure or deface any trees thus designated * * * shall forfeit not less than five nor more than one hundred dollars * * *." Laws 1895, c. 86. At the next session the Legislature authorized selectmen to set out nursery trees, which might be presented to them, in such highways as the donor should indicate, but provided that "nothing in this act shall be construed to compel any party to have trees in the highway on the side next his land without his consent." Laws 1897, c. 44.

From this examination of legislation previous to the act of 1901, it is apparent that it was not part of the legislative purpose to deprive abutters on highways of their property in the trees growing therein, but to more effectually guard and preserve such trees (*Chase v. Lowell*, 149 Mass.

85) so long as they were permitted to remain in the highway. The provision in section 2, c. 98, Laws 1901, that "towns and cities shall have control of all shade and ornamental trees situated in any public way or ground within their limits," was not intended to have a more extensive meaning or to be more expressive of the purpose to appropriate private property to a public use than language of similar import used in s. 1, c. 2,258, Laws 1861, where the rights of abutters on highways were recognized and protected. The Legislature has thus furnished evidence of a public policy based on an assumption or recognition of the fact that in laying out highways the abutter retained his property in the trees therein, which, not being obstructions, were allowed to stand in the untraveled part of the way. This practical, contemporaneous construction of the rights of the landowner is evidence of great weight upon the question whether the public acquired the right, when the way was laid out, to terminate at any subsequent time his proprietary dominion of trees in the highway. That such a power has not been directly recognized in the legislation upon the subject, which is readily susceptible of a construction excluding its existence, is a very significant evidentiary fact.

Whether a different result might not be reached in the case of the laying out of a street in a city or populous community, where all the land taken is required for actual present use (2 Dill, Mun. Corp., s. 688; *Chesapeake, etc., Gaslight Co. v. Mackenzie*, 74 Md. 36, 47; *Bloomfield, etc., Gaslight Co. v. Calkins*, 62 N. Y. 378; *Boston v. Richardson*, 13 Allen 146, 159), it is unnecessary to consider; for it seems plain that trees growing by the side of an ancient rural highway upon land not required for the accommodation of actual travel belong to the owner of the adjacent land, who cannot be deprived of his rights as owner without compensation, after a legal hearing. *Winchester v. Capron*, 63 N. H. 605. Whether the trees are useful for shade and add to the beauty of the way, or whether they

are only useful for lumber and wood, cannot determine the question of his ownership. If they are his property, he is entitled to the beneficial use of them, subject to such reasonable regulations as the public use of the highway may require. *White v. Godfrey*, 97 Mass. 472, 475; *Bliss v. Bell*, 99 Mass. 597; *Clark v. Dasso*, 34 Mich. 86; *Bills v. Belknap*, 36 Iowa 583; *Everett v. Council Bluffs*, 46 Iowa 66. But to permanently deprive him of the beneficial use of his property or of the profits or income usually derivable therefrom, is not a reasonable regulation but is an extinction of his right without corresponding compensation and amounts to confiscation. As this proceeding is based upon the theory that the defendants had no right, under any condition, to cut down the trees in question—in effect, that their property right in the trees had been legally divested and fully paid for, and as the plaintiffs have not proceeded to divest the defendants of their title in the manner pointed out in s. 3 of the act, the result is that the prosecution cannot be maintained.

Case discharged. All concurred.

EXISTING LAW SHOULD BE CONTINUED.

From the foregoing it is evident that the tree warden law in its present form will prove inoperative unless the abutting owners consent to the marking of their trees for preservation, or unless the towns themselves are willing to subject themselves to the expense of paying for the trees thus preserved. So far as we have been able to learn, no town has expressed a willingness to tax itself for this purpose, and since the date of the rendering of the opinion above quoted we have instructed tree wardens to procure the consent of the abutter in advance of the attachment of any of the tree tags. In most cases this consent has been readily obtained.

It may be possible to obviate one serious source of embarrassment in this matter by enacting a provision whereby the right to recover damages for designated trees shall be made contingent upon the action of the abutting owner.

That is to say that no right to recover shall continue beyond a stated period, not to exceed sixty or ninety days, after the tree has been tagged. Such legislation would destroy no property rights now existing and would merely shift the burden of procedure from the state to the individual owner.

At any rate the existing law should be retained and made more workable if may be. It has already resulted in no little benefit and, if rightly enforced, will add much to the attractiveness of our highways, which are now the object of so much attention.

LIST OF TREE WARDENS.

Below is a list of tree wardens in the state, so far as they have been appointed by the selectmen :

S. B. Sleeper,	Alexandria.
C. H. Cooke,	Alstead.
Horace Howell,	Amherst.
Frank A. Holbrook,	Amherst.
John H. Dodge,	Amherst.
E. Burt Thompson,	East Andover.
William Morrill,	Andover.
Horace B. Tuttle,	Antrim.
George P. Dow,	Atkinson.
John George,	Center Barnstead.
Harry H. Hall,	Bath.
Allen F. King,	Bedford.
Samuel W. Knowles,	Belmont.
H. J. Burt,	Bennington.
William Kendall,	Benton.
F. C. Abbe,	Bethlehem.
John E. French,	Bradford.
Charles S. Dunbar,	Brookline.
Leroy A. Glines,	Canterbury Depct.
Dr. L. B. Morrill,	Center Harbor.
John E. Hodgdon,	Ossipee.
William Swan,	Charlestown.
George W. Stevens,	Claremont.
G. H. Haines,	North Chichester.
William W. Balloch,	Cornish (Windsor, Vt. P. O.).

John S. Allen,	Danbury.
John P. Webster,	Danville.
James S. Craine,	Deering.
Charles W. Forsaithe,	Deering.
Charles Bartlett,	Derry.
George W. Rowen,	Dorchester.
Milton D. Mason,	Dublin.
Cyrus P. Keay,	Effingham.
Burley O. Avery,	Ellsworth.
William A. Saunders,	Enfield.
James D. Whittemore,	Epping.
Newell S. Tilton,	Exeter.
John H. Waldron,	Farmington.
William B. Chase,	Franconia.
Henry C. Tenney,	Fitzwilliam.
Charles N. Emerson,	Franklin.
Rev. Henry C. McDougall,	Franklin Falls.
Edward C. Fox,	Freedom.
Thomas Cogswell,	Gilmanton Iron Works.
William H. Stinson,	Goffstown.
Frank A. Parker,	Goffstown.
Charles A. Chandler,	Gorham.
George B. Kimball,	Grafton.
William H. Packer,	Greenland.
F. W. Ely,	Greenville.
George W. Clyde,	Hudson.
William C. Russ,	Hopkinton.
Fred E. Stevens,	Hooksett.
Emmons C. Newman,	Hillsborough Bridge.
Charles P. Cowdrey,	Henniker.
Charles P. Heywood,	East Harrisville.
Henry F. Robinson,	Hancock (Elmwood P. O.).
Edward L. Clifford,	Hanover.
A. P. McPherson,	Hanover (Etna P. O.).
Ransom S. Cross,	Hanover (Enfield P. O.).
Frank F. Perry,	South Hampton.
George J. Penner,	Hampstead.
George B. Shaw,	Kensington (Exeter P. O.).
Arthur E. Poole,	Jaffrey.
Harlan P. Scheileng,	Kingston.
William D. Veazey,	Laconia.
D. C. Remich,	Littleton.
R. P. Peckett,	Franconia.
Bert Osgood,	Loudon.
Payson E. Fairfield,	Lyne.

George E. Bates,
Parkman A. Moulton,
Lewis A. Sibley,
James W. Rogers,
Clarence L. Trow,
Charles W. Needham,
Andrew J. Felker,
Anson S. Longa,

Hermon Whittaker,
Charles A. Bemis,
Martin V. B. Felker,
J. J. Doyle,

Conrad Push,
Eben E. Berry,
Horace Clough,
Thomas F. Pickering,
I. E. Aldrich,
Arthur C. Bradley,
William H. Wright,
Edward Hayford,
Frank Peverly,
Charles F. Buell,
Gawn E. Gorrell,
William Tasker,
Oliver B. Tuttle,
E. Harvey Edmonds,
Frank S. Jenkins,
Frank D. Osgood,
Charles W. Abbott,
Charles W. Cass,
Frank M. Woodbury,
Almon A. Davis,
Charles E. Lowe,
Charles E. Hunt,
John Leavitt Brown,
Frank W. Chase,
William H. Walton,
Thomas D. Merrick,
George S. Hoyt,
Adoniram C. Davis,
John D. Campbell,
James E. Handy,
Joel F. Whittemore,

Mt. Vernon.
Moultonborough.
Moultonborough.
Mill Village.
Milford.
Milford.
Meredith Center.
Merrimack
(Reed's Ferry P. O.).
Mason.
Marlborough.
Madbury.
Chairman Board of Public
Works, Nashua.
Newcastle.
New Durham.
Newfields.
Newington.
New Ipswich (Smithville P. O.).
Newport.
Newport.
Newton.
Tilton.
Tilton.
Tilton.
Northwood.
North Nottingham.
Plymouth.
Pittsfield.
Pittsfield.
Peterborough.
Plaistow.
Pelham.
Roxbury (Keene P. O.).
Randolph.
Randolph.
Seabrook.
Seabrook.
Smithtown.
Somersworth.
Center Sandwich.
North Sutton.
Sunapee.
West Swanzey.
Stoddard.

Fred H. Noyes,	Stewartstown.
Prescott Coburn,	Stratham.
James Simpson,	Shelburne.
M. B. Stevens,	West Salisbury.
G. S. Sanborn,	Sandown.
Jacob W. Kelley,	Salem (Methuen, Mass., P. O.).
George F. Batchelder.	Tamworth.
Frank H. Carle,	Tamworth (Chocorua P. O.).
E. E. Colburn,	Temple.
Arthur S. Browne,	West Thornton.
Christopher F. Lawson,	Troy.
Charles O. Doe,	Wolfeborough.
W. L. E. Hunt,	North Woodstock.
James H. Bliss,	Winchester.
Carlos C. Davis,	Winchester.
Henry Sheldrick,	Wilton.
George H. Woodward,	Wilmot.
James A. Goodwin,	Whitefield.
Harry M. Turner,	Wentworth.
Ira P. Whittier,	Webster (Contoocook P. O.).
Joseph L. Tuttle,	Waterville.
Fred Bean,	Warner.
E. L. Houghton,	Warren.
James Tucker,	Wakefield.

REFORESTATION.

At the last session of the Legislature measures were taken to secure state co-operation in the reclaiming to forest uses of the abandoned lands in the state, and it was enacted that such lands, planted with timber trees under certain conditions, should have almost complete exemption from taxation for a period of thirty years; while, to facilitate such action, the Forestry Commission was authorized to contract with reputable nurserymen for a supply, at reduced price, of such seeds and seedlings as were necessary for this purpose.

This last provision was hastily drafted near the close of the session as a substitute for a pending measure, which provided for the establishment by the state of a forest nursery at an initial expense of ten thousand dollars. The nursery bill failing to secure passage, the provision above

cited was drawn, as stated, as a substitute measure, with the idea that a public demand for forest nursery products might be developed during the ensuing two years.

The commission have been unable to carry out the intent of this enactment. No nurserymen have been found willing to enter upon such a contract without a guarantee from the state of a minimum purchase of seeds or seedlings. Such a guarantee we were unable to furnish and no contract was therefore made.

On the other hand, it should be said in all fairness, that no application for seeds or seedlings has been made to us under the terms of the enactment. It does not follow, however, that there is no demand for seeds and seedlings for forest planting, because we well know the fact to be to the contrary.

In one or two instances reforestation has been attempted by certain landowners, who have either raised their own stock for planting or have purchased it from established nurseries. In the first class are the Blue Mountain Forest Park Association at Newport and the Mount Pleasant Hotel Company at Bretton Woods; while in the latter class is Mr. Rosecrans W. Pillsbury, who has planted a considerable tract to white pine on his farm in Londonderry.

A FOREST NURSERY.

We have no doubt that if a forest nursery existed in New Hampshire for the supply of reliable seeds and seedlings, a considerable acreage of land, now valueless, could be brought under forest cover. We are not, however, inclined at present to recommend the establishment of such a nursery at state expense, because, if the venture should prove a failure, the state would probably find itself in possession of property for which there would be no use whatever.

We believe, however, that it is possible to meet every legitimate demand of this character without subjecting the state to any expenditure in a permanent nursery fund.

At Bretton Woods, the Mount Pleasant Hotel Company

has already established a forest nursery for the propagation of seedlings for use on its own estate. This nursery is in charge of a trained forester from the federal Bureau of Forestry, and the seedlings there produced are used for planting on the hotel property, aggregating 10,000 acres in area, in accordance with a working plan of the Bureau of Forestry.

At the Blue Mountain Forest Park a similar working plan is now being carried out under the direction of another trained forester. It is altogether likely that the state could make a reasonable arrangement with either the Mount Pleasant Hotel Company, the Blue Mountain Forest Park Association or some individual for the supply of such seeds and seedlings as might be needed—an arrangement which would relieve the state from any expense beyond such contribution to the annual charges of the existing nurseries as might be determined upon. We therefore recommend that authority be given to enter into some such arrangement for a period sufficient to determine whether there is a permanent demand for such an institution.

Within the last fifty years more than 1,750,000 acres of our area, or substantially one fourth part of the state, has reverted from an improved to an unimproved condition. This land is chiefly worthless in its present condition and is fit only for bearing trees. If it could be reforested with some of the more desirable species of timber trees it would add immeasurably to the future taxable inventory of the state and would give permanence to many local woodworking industries which must otherwise soon confront the problem of extermination.

THE NATIONAL WHITE MOUNTAIN PARK.

As the result of the efforts of the commission and associate organizations, notably the Society for the Protection of New Hampshire Forests and of the Appalachian Mountain Club, public attention during the past two years has been earnestly directed toward the movement for the estab-

lishment of a National Forest Reserve in the White Mountain region. It had become evident that private effort could not stay the devastation wrought even by the best conducted lumbering among the primal growth. It was also evident that interstate commercial reasons gave the location national import, inasmuch as the headwaters of five New England rivers, the Connecticut, the Androscoggin, the Saco, the Merrimac, the Piscataqua, turning myriads of spindles and giving life to important industrial communities, were among these mountains, the demolition of whose forests would bring serious consequences to New England, aside from the very great detriment to summer travel, because they yield so much pleasure and health-giving recreation to citizens of the entire country and financial aid to railroads, steamboats and hotel properties, which in turn are large purchasers of the surplus products and labor of our people.

The commission in its last report, as sponsor, presented this question to the Legislature and procured the passage of the following memorial to congress:

JOINT RESOLUTION FAVORING THE ESTABLISHMENT OF A NATIONAL FOREST RESERVE IN THE WHITE MOUNTAIN REGION.

WHEREAS, certain permanent and summer residents of this state have taken steps to memorialize congress for the establishment of a national forest reserve in the White Mountain region; and

WHEREAS, the establishment of such a reserve would perpetuate valuable forest growths and forever preserve the headwaters of several important streams and thus benefit the commerce, industry and agriculture of all the New England states, save one; and

WHEREAS, the White Mountain region is of increasing importance as a pleasure resort to fully one quarter of the entire population of the country who reside within easy reach of it; therefore be it

Resolved by the Senate and House of Representatives in General Court convened:

That the Legislature of New Hampshire hereby expresses its approval of the proposition to establish a White Mountain national forest reserve.

That the consent of the state of New Hampshire be and is hereby given to the acquisition by the United States by purchase, gift or condemnation according to law, of such lands in this state as in the opinion of the federal government may be needed for the establishment of a national forest reserve in the White Mountain region.

That power is hereby conferred upon congress to pass such laws as it may deem necessary to the acquisition of lands in this state for the purposes of such a national forest reserve.

That power is hereby conferred upon congress to pass such laws and to make, and provide for the making of, such rules and regulations of both civil and criminal nature, and provide punishment for the violation thereof, as, in its judgment, may be necessary for the management, control and protection of such land as may from time to time be acquired by the United States under the provisions of this joint resolution: Provided, That the state of New Hampshire shall retain a concurrent jurisdiction with the United States in and over such lands so far that civil process in all cases, and such criminal process as may issue under the authority of the state against any person charged with the commission of crime without or within said jurisdiction, may be executed thereon in like manner as if this joint resolution had not been passed.

That the senators and representatives in congress from this state are hereby requested to urge upon congress the importance of prompt and favorable action on behalf of the proposition to establish a White Mountain national forest reserve.

[Approved January 20, 1903.]

In furtherance of the idea was procured the appropriation for the White Mountain forest survey, of which we have heretofore spoken, and as a result of which it was expected to procure evidence supporting the claim of the White Mountain region upon congressional attention.

After consultation with our delegation in congress, with the societies referred to and with friends of the work throughout New England and the country, and as the result of the information derived from the forest survey conducted through the year, the commission determined to present a bill at the opening of the second session of the Fifty-eighth Congress.

After consideration, a measure, drawn upon the lines of

the one pending, presented by the central-southern states and known as the Southern Appalachian bill, was decided upon, as embodying the essentials of legislation most likely to invite support and to disarm opposition.

This bill, prepared by us, was introduced in the Senate by Senator Gallinger soon after the opening of the session of congress in December and is as follows:

A BILL.

FOR THE PURCHASE OF A NATIONAL FOREST RESERVE IN THE WHITE MOUNTAINS, TO BE KNOWN AS THE NATIONAL WHITE MOUNTAIN FOREST RESERVE.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

That the Secretary of Agriculture is hereby authorized and empowered, in his discretion, to purchase land suited to the purposes of a national forest reserve in the White Mountains, within the State of New Hampshire, in total extent not to exceed one million acres, and to care for, protect, use and make accessible the said reserve, the same to be known as the "National White Mountain Forest Reserve."

SECT. 2. That the Secretary of Agriculture shall advertise in the State of New Hampshire for lands to be purchased under the provisions hereof, and as between lands of equal value, for the purposes of this act the lowest bids shall be accepted: *Provided*, That the Secretary of Agriculture is hereby authorized and empowered, in his discretion, to contract for the purchase of lands, exclusive of the timber thereon, of kinds and sizes to be specified in the contract, said timber to be cut and removed under the supervision of the Secretary of Agriculture in accordance with rules and regulations to be established by him for that purpose: *Provided further*, That the Secretary of Agriculture is hereby authorized and empowered, in his discretion, to contract for the purchase of lands, exclusive of the mineral rights therein; and on such lands so acquired mineral deposits may be mined under such rules and regulations as the Secretary of Agriculture may prescribe, and which rules and regulations, as provided in this section for cutting and removal of timber and mining for minerals, shall be embodied in the contract for purchase and conveyance of title.

SECT. 3. That in the acquirement of lands for the purposes of this act the Secretary of Agriculture shall conform to the conditions prescribed in the present or future act or acts of the Legislature of the State of New Hampshire ceding to the United States the right to acquire and control such lands: *Provided*, That when the owners of lands sought to be acquired for the purposes of this act are unwilling to sell the same on terms satisfactory to the Secretary of Agriculture, condemnation proceedings for the acquirement of such lands shall not be had so long as the said owner shall protect and perpetuate the forests on said lands, under such regulations as may be prescribed by the Secretary of Agriculture for the control of the forests on other lands purchased by the government under this act, so far as the same may be applicable.

SECT. 4. That the Secretary of Agriculture is hereby authorized and empowered to accept gifts of land for the purposes of this act, and such lands shall thereafter be known by such names as the donors, with the approval of the Secretary of Agriculture, may prescribe.

SECT. 5. That the Secretary of Agriculture may do all things necessary to secure the safe title in the United States to the lands herein provided to be purchased; but no payment shall be made for any land purchased under this act until the title to such land shall be satisfactory to the Attorney-General and conveyance thereof duly executed and accepted.

SECT. 6. That the Secretary of Agriculture shall make provision for the reforestation of clearings on lands purchased under the provisions of this act, whenever such planting shall be necessary for the protection of the soil or water supply.

SECT. 7. That the Secretary of Agriculture is hereby empowered and directed to make such rules and regulations and establish such service as he may deem necessary for the care, protection, control and use of such forest reserve, and to sell such wood, timber and other products as may be removed without injury to the forest: *Provided*, That no wood, timber or other products shall be sold otherwise than under such rules and regulations as shall be prescribed by the Secretary of Agriculture, but no sale of such products shall be made at less than the appraised value thereof: *And provided further*, That the proceeds of such sale shall be covered into the treasury of the United States.

SECT. 8. That the Secretary of Agriculture is hereby authorized and empowered to make contracts for the purchase of lands and accept conveyance thereof in accordance with the provisions of this act to the amount of not to exceed five million dollars; and the sum of one million dollars thereof, to be available immediately and until the expiration of the year ending June thirtieth,

nineteen hundred and six, is hereby appropriated, out of any moneys in the treasury not otherwise appropriated, for the purchase of lands for a national forest reserve and otherwise to carry out the provisions of this act: *Provided*, That the Secretary of Agriculture shall each year make a detailed report to congress of his doings in the premises: *And provided further*, That no part of said sum hereby appropriated shall be expended for the purchase of land in the State of New Hampshire under the provisions of this act until a valid title to the same shall be vested in the United States, and until the said state shall have ceded to the United States exclusive jurisdiction of the same during the time the United States shall be or remain the owner thereof, for all purposes except the administration of the criminal laws of said state and the service of any civil process therein.

SUPPORT FOR THE MEASURE.

The bill was referred to the Senate committee on forest reservations and preservation of game.

Through the instrumentality of the commission a prompt and vigorous movement was soon under way to petition congress in favor of the measure, and more than 500 petitions, signed by more than 10,000 persons, were presented to congress by our senators and representatives.

In April, 1904, as the session of congress was approaching its close, the president and secretary of the commission visited Washington on behalf of the White Mountain Reserve bill, and, as a result of a brief but vigorous campaign, were enabled to procure a favorable report on the measure from the committee to whom it had been referred. The report will be prepared by Senator Burnham of our own state, one of the members of the committee, and will be filed at an early day in the approaching session of congress.

While it is impossible to predict immediate favorable action by congress upon this subject, we are, nevertheless, encouraged to believe that at some time, probably not remote, a National White Mountain Forest Reserve will be established. It will be necessary, however, to continue the agitation vigorously in order to induce congress to act favorably on the measure.

The efforts of the commission in this direction will not be relaxed. The campaign of petitions, already so well begun, will be continued more energetically than before; and in addition we shall utilize all means within our power to engage the favorable attention of individual members of both houses of congress to the tremendous importance of this measure to New England's most vital interests.

OUR DELEGATION ACTIVE.

Our senators and representatives in congress are ardently enlisted on behalf of the White Mountain Reserve. To Senator Gallinger all friends of the measure owe an especial debt of gratitude for his prompt sponsorship of the bill and for his energetic and helpful labors in aid of its favorable reporting from its committee. Senator Burnham, a member of the committee, has been in a position to render the measure great assistance and has the further opportunity successfully to attempt its early passage through the Senate. In the House, Congressman Currier's labors have been of high value in securing concord of opinion between the friends of the White Mountain bill and the friends of a similar measure for the Southern Appalachians. This latter proposition was favorably considered in the Senate during the Fifty-seventh Congress, but failed of passage in the House. Its friends have hitherto claimed for it a legislative priority over the White Mountain measure; but, thanks to Mr. Currier's good management, the House advocates of both measures are now ready to act upon them at the same time, a circumstance which leads to the hope that our relief by congressional action may not be as remote as some have thought.

Congressman Sulloway has given to the bill the benefit of all the support and influence which his long service in congress now permits him to enjoy and his energies in its behalf promise no small degree of support for it.

In our last report we published a full outline of the gen-

eral argument in favor of the White Mountain Forest Reserve and we do not deem it necessary to multiply the present pages by a repetition of it.

It had been expected that the results of the examination of the White Mountain region, previously referred to, would produce many facts tending to emphasize the great desirability of favorable action on the part of congress. The report of the examining party, as printed elsewhere in this report, provides such argument.

CONTINUATION OF HYDROGRAPHIC WORK.

In one respect, however, it is incomplete. The hydrographic portion of the examination, by means of which is to be determined the relation of the New Hampshire forest cover to the great water courses of the several states of New England originating within our state, must necessarily cover a more extended period of time than has been possible since the beginning of the examination in May, 1903.

The arrangement made with the Bureau of Hydrography of the United States Geological Survey was that the funds of the bureau should supplement the state appropriation, dollar for dollar, in every expenditure made in New Hampshire, and we have thus been enabled to procure a considerable body of data at little expense.

In carrying forward this work several gage stations have been established at different points on our water courses, and readings are now being taken continuously. It is not the purpose of the Geological Survey to continue these readings, however, unless New Hampshire desires it. The officials of the Survey express an entire willingness to go on with the work under present conditions if authority can be obtained for so doing. We therefore recommend that provision be made also for carrying on the hydrographic examination for the ensuing two years.

COMPLETION OF FOREST MAP.

The success attending the forest examination of the White Mountain region is so great and the value of the results secured is so obvious, that we recommend the extension of a similar examination to all the other forested areas of the state.

Within the territory in New Hampshire lying south of the limits covered by Mr. Chittenden and his party much field work has already been done by the federal Bureau of Forestry, and a considerable amount of data is now available concerning the secondary forest area. While the area to be explored is considerably larger than that covered by the Chittenden field party, it is obvious that, by reason of the work already done, of the smaller proportion of area covered by actual forest, of the facility of movement within the designated territory and of the more favorable topography, a forest survey of that portion of the state could be made very rapidly. We therefore recommend that the Legislature authorize the expenditure of the balance now remaining in our hands from the appropriation of 1903, together with such sum as is necessary to make a total of three thousand dollars, for the extension of the forest survey over that portion of the state not already covered.

Two highly desirable results would be secured by such action: (1) The forest map of the state, now complete as regards the White Mountain region, could be perfected with reference to our entire area; and (2) the work of examination could be made to include an investigation of soil and topographical conditions, which would enable the people of the state to know what of the waste lands which we now have could be best utilized in forest culture.

IMPROVEMENTS IN FORESTRY WORK.

Since our last report there has been great improvement in forest conditions and in the manner of presenting forestry interests to the public. Lurid editorials, once filling

distant and poorly informed journals, have disappeared; sensational correspondence from mountain and forest resorts has given place to sensible and interesting statements of actual conditions.

The relations between the great interests involved in forest preservation and culture have become better known and understood, so that the diverse and somewhat complex undertaking, involving capital and skilled labor, a higher degree of proficiency in the management of lumber operations, the construction of roads and even the erection of places of entertainment, have become blended into an interdependent system, wherein all plans combine for forest protection, personal enjoyment, commercial and æsthetic profit.

Much as has been accomplished, there yet remains much to do in like direction. We have not yet recovered from the devastating fires of 1903. Great areas were then destroyed, that can never in the life of living man be replaced. Attention must yet be concentrated on preventive measures, with forest patrols and municipal control to save repetition of dire disaster. It is beyond doubt that last year's fires were widely scattered along railway lines, operated both for timber purposes and ordinary traffic. It is to be presumed that the managers of these roads will constantly seek for protection from self interest alone through any practical devices. All aid available from the Legislature should be granted.

There are spots in our wooded domain that should be put beyond risk of cutting, if possible, at an early day. Such spots as the slopes of Mt. Adams in the Presidential Range, the growth around Glen Ellis Falls and at salient points in the mountain region should emphasize the need of immediate action. As the commission has no funds, voluntary contributions or Legislative action alone can prevent devastation, pending action by the congress.

With the more complete understanding of the subject that now obtains, there has undoubtedly grown better, more economical and less wasteful methods of lumbering.

NEW HAMPSHIRE'S FOREST COVER.

The state may be broadly divided into three classes of land under forest cover: (1) Those areas everywhere that have been cut over—the great tracts in the lumber woods, exterminated or ruthlessly cut, to grow up into sprout land in a few years, remaining as palpable traces of devastation on mountain side and valley, but which are robbed of their commercial value; (2) those detached groups of second growth, scattered over the southern, western and southwestern parts of the state; and (3) the lessening area of primeval forest growth.

Time alone can hide by young growth the deep scars in the northern region and among the great mountains and valleys; the incoming of summer residents and lovers of nature to all the hillsides and points of attraction in lower New Hampshire has checked through purchase, and will continue to check in like manner, destruction in that section; while the right to apply to the state to condemn, in flagrant cases of spoilation, will prove a potent factor to retain spots of natural beauty and forest cover.

There is no manner of doubt that our forest cover of all kinds increases year by year and we may conclude that its scenic value adds to the material wealth of the state.

There is, however, one thing against which we may not contend successfully unless strengthened by the federal power. Intelligent landowners and even promoters will preserve their land for recurring crops of timber. The summer guest and lover of the beautiful may secure minor areas by purchase or in extreme instances through the drastic course of condemnation, but against the demands of printing press and paper mill there is little protest possible. The state is not in condition to buy up all its forest land or to exercise the right of eminent domain, to be followed of course by compensation.

Our natural hope seems to be with congress through the establishment of reservations that will protect our water

supply, the source of power for manufacturing enterprises, furnishing employment to labor and investment to capital, and establishing a natural sanatorium to which may come the weary and the pleasure seeker for the pure air, glancing waters, crisp breezes and a touch of mother earth in her best estate.

We have devoted our efforts toward the establishment of this national park. We respectfully submit that with local problems entirely within your control, the preservation of the forests and forest cover of Southern New Hampshire is found in the self interest of owners of smaller areas, while the establishment of a national park or parks among the mountains and lakes of the great north forests of our upper counties will alone afford preservation and development of the deeper woods and those grander landscapes possible of attainment.

FURTHER RECOMMENDATIONS.

The report of Mr. Chittenden, to which such frequent allusion has been made, embraces, in addition to the detailed results of his examination, two important recommendations:

1. There should be a chief fire warden, who should also be state forester, who should maintain a state forest nursery for the distribution at cost of forest seeds and seedlings, and should bring about, by lectures and instruction on the ground, a better management of forest lands within the state.

2. Since an excellent opening exists for the creation of a state reserve by the purchase of cut-over land in the mountains, the adoption of a policy looking to this end is recommended.

That portion of Mr. Chittenden's recommendation relating to the establishment of a forest nursery we have already discussed. We are of the opinion that, in the present condition of the state revenues and expenditures, it

would be unwise for New Hampshire to undertake to invest even so small a sum as ten thousand dollars in a plant which may prove in a few years of little or no value; but we are earnestly in favor of some arrangement being made whereby existing nurseries can be used for the general good of all our citizens.

Mr. Chittenden's second recommendation, looking toward the creation of a state reserve by the purchase of cutover lands in the mountains, need not be seriously considered at present. The "excellent opening" for the creation of such a reserve to which he refers, will not immediately disappear, and it will be ample time after the failure of the present vigorous movement for the establishment of a national reserve to discuss ways and means for the creation of a state reserve upon any basis whatsoever.

The recommendation for a state fire warden, who should be the state forester, brings up the entire question of the reorganization of the forestry department.

As we have elsewhere said in this report, the present forestry commission was established at a time when the forestry movement was wholly in a sentimental stage, although the board in its first report, in all succeeding reports, and in all its work, has endeavored to lay emphasis more especially on the practical side of forestry. At that time, too, there were few, if any, trained foresters in New Hampshire, there being no demand for them. There was then no forest school in this country, and little or no attempt was made by any landowner to gather his timber crop in any but the most expensive and wasteful of methods.

In the last ten years all this has changed. There are now several schools of forestry in the country, two of them being in New England; there is a large body of trained foresters available for forestry work; timber landowners are coming to realize the absolute necessity for the adoption of rational forestry if they are to continue in business; and the recasting and enforcement of our forest fire laws probably makes it of some importance that New Hamp-

shire should now consider whether its forestry department should not be in some degree reorganized.

We are not certain that it would be wise to create a single-headed department such as a state forester would be, but we think some course might be readily devised which would secure all the advantages of trained forestry service in the department and at the same time preserve to the state its traditional method of procedure.

For example: If a bi-partisan commission of two members could be established, clothed wholly with administrative power and its members authorized to appoint a forester, probably a satisfactory solution of the problem would be reached. Such a course has one important argument in its favor: Under the present forestry laws, the forestry commission sits in a quasi-judicial capacity in hearings on petitions for the taking of land for public parks. Such hearings, involving as they do many disputed points of public policy and local necessity, ought not to be decided by one mind. Our experience has shown, however, that a commission the size of the present one is too large, because of the difficulty of securing a quorum to sit in such cases at the desired times. We give it as our opinion, therefore, that a commission of two, authorized to appoint a forester, might serve all the purposes of the case. The commission could then exercise the administrative and judicial functions now devolving upon the present board, while the forester could assume the duties of a fire warden and could carry on the educational work heretofore referred to.

In the event of such a reorganization of the department, we venture to suggest that the commissioners should not be required to serve without pay. While there are no doubt many disinterested and high-minded citizens who would be willing to assume the duties of the office without compensation, the experience of the present board in such matters has been such as to warrant the assertion that if the services of any man are worth having they are worth paying for.

We therefore suggest that if such reorganization as we have indicated is undertaken, provision be made for suitable compensation for the commissioners, the same as for a forester. It might be possible to provide for a small salary for the commissioners and for the forester without materially increasing the expense of the department over what it has been in some years under the present system.

HENRY O. KENT, *President*,
GEORGE H. MOSES, *Secretary*,
GEORGE E. BALES,
MARSHALL C. WENTWORTH,
Forestry Commissioners.

CONCORD, October 30, 1904.

APPENDIX.

FOREST CONDITIONS OF NORTHERN NEW HAMPSHIRE.

BY

ALFRED K. CHITTENDEN,

Assistant Forest Inspector,
Bureau of Forestry.

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FIG. 1.—MT. BOND, SHOWING CLEAR CUTTING ON UPPER SLOPES.



FIG. 2.—MT. WEBSTER. THESE STEEP SLOPES ARE EASILY ERODED.



FIG. 1.—NORTH PEAK OF MT. CLAY. ELEVATION, 5,334 FEET.



FIG. 2.—PRESIDENTIAL RANGE. MTS. CLAY AND JEFFERSON.

FOREST CONDITIONS OF NORTHERN NEW HAMPSHIRE.

INTRODUCTION.

Early in 1903 the Legislature of New Hampshire passed the following resolution :

Resolved by the Senate and House of Representatives in General Court convened:

That the forestry commission be and hereby is authorized and directed to procure, upon terms to be approved by the governor and council, a general examination of the forest lands of the White Mountain region by employees of the Bureau of Forestry in the Department of Agriculture at Washington, whose report shall be laid before the next session of the General Court; and the governor is hereby empowered to draw his warrant for a sum not exceeding five thousand dollars upon any money in the treasury not otherwise appropriated to meet the expense of such examination.

Approved February 24, 1903.

The examination authorized by this resolution was begun in May of the same year and prosecuted during the summer months.

The lines of investigation followed were those laid down, after consultation with the State Commission, in the following extract from a letter from the Secretary of Agriculture to the Commission :

The specific purpose of this work will be to determine by a thorough study on the ground of the conditions existing in the forest and the causes of those conditions; to estimate the cost and devise the methods necessary to the preservation of the forest of the White Mountain region and ultimately of the whole state; and to forecast the character and the value of its results.

The following lines of investigation commend themselves to me as the more important:

1. A study of the composition and quality of the forest and an estimate of the present stand, results which would be used partly in the completion of the forest map of New Hampshire, published in 1894.

2. A study of the characteristics of the more important trees and of the conditions necessary to their successful reproduction.

3. A study of the methods and extent of lumbering, of its effect upon the forest, and of those modifications which are practicable in order to improve the condition of cut-over lands.

4. An investigation of the value of the forest as a conserver of the water supply, in which I hope to obtain the assistance of the U. S. Geological Survey. This would include the determination of the size and condition of the watersheds tributary to large streams rising within the White Mountain region; of the effect of forest destruction upon the flow of these streams; and of the value and amount of water power which is available at different seasons of the year or which is already in use.

5. A study leading to a statement of the size, the value, and the character of the lumber industry of the state of New Hampshire.

The timber map, which accompanies the present report, presents a part of the results of these investigations. It covers the entire state north of Squam Lake as far west as the farm lands along the Connecticut River, embracing in all an area of 3,050 square miles, or 32 per cent. of the area of the state. This map shows the extent and present condition of the forest. It is as accurate as careful field work in the short time available could make it. It is not designed, however, to show the exact amount of timber on small areas, but rather the present condition of the forest throughout the region examined.

The study of forest fires, which are without doubt the greatest danger confronting the forests of New Hampshire today, was carried on with a view to devising some adequate system of fire protection for the state. Without efficient protection of the forest from fire, the attempt to carry on a conservative system of lumbering will fail all along the line, since both the commercial productiveness and the permanent preservation of the forest depend upon it.

The study of the wood industries embodied in this bul-

letin was made by Mr. J. Girvin Peters, forest assistant in the Bureau of Forestry.

The co-operation of the Division of Hydrography of the U. S. Geological Survey resulted in the accompanying preliminary report upon its work.

RESUME OF CONCLUSIONS.

The conclusions and recommendations based upon the study of forest conditions in Northern New Hampshire by the Bureau of Forestry are given in detail at the end of this report. They may be briefly summarized as follows:

1. Unless the forests are effectively protected from fire, the value of Northern New Hampshire both as a summer resort, now the source of an annual revenue of approximately eight million dollars, and as a source of timber supply, will be seriously affected.

2. Safety from forest fires is impossible without the organization of a fire service. Detailed recommendations for this are made elsewhere in this report.

3. Conservative lumbering under the supervision of trained foresters would pay the large lumber and pulp companies operating in Northern New Hampshire better than the present method.

4. The conservative management of farm woodlots is practicable and greatly to be desired.

5. Forest planting upon denuded lands unsuited for agriculture promises good returns.

6. There should be a Chief Fire Warden, who should also be State Forester, who should maintain a state forest nursery for the distribution at cost of forest seeds and seedlings, and should bring about by lectures and instruction on the ground a better management of forest lands within the state.

7. Since an excellent opening exists for the creation of a forest reserve by the purchase of cut-over lands in the mountains, the adoption of a policy looking to this end is recommended.

THE REGION.

PHYSIOGRAPHY.

The territory covered by this report is that part of the state north of Squam Lake, and west as far as the agricultural lands along the Connecticut River. It includes the northern portions of Grafton and Carroll counties and the whole of Coös county, and embraces in all a total area of 1,951,977 acres, or 32 per cent. of the entire state. It contains the entire White Mountain region, and is drained by four large river systems, the Connecticut, the Pemigewasset, the Saco, and the Androscoggin, all of which have their origin within the territory under examination.

TOPOGRAPHY.

The White Mountain region occupies the southern and larger portion of this area. The country is very rough and rugged, broken up, as it is, into many short mountain ranges and deep, narrow valleys. The northern part of the area is flatter, and contains many lakes and low mountains, with wide, rolling valleys between. The entire region is essentially a forest country. That the land is, for the most part, better suited to forest production than to agricultural use is evidenced by the thousands of acres of abandoned farms, which have now largely come up to dense forests of second-growth spruce and pine. Where repeated fires have not kept back the young growth, these give good promise for the future.

The White Mountains cover about 812,000 acres, or 42 per cent. of the entire area examined, lying in northern Grafton and Carroll counties and southern Coös county. Seventy-four mountains reach a height of over 3,000 feet, and of these 11 are over 5,000 feet in height. The tallest, Mt. Washington, rises to an altitude of 6,290 feet above the sea, and is the second tallest peak east of the Mississippi River.



FIG. 1.—MT. WASHINGTON AND HEAD OF THE GREAT GULF.



FIG. 2.—SUMMIT OF MT. SAM ADAMS. ELEVATION, 5,585 FEET.



FIG. 1.—GRANITE QUARRY AT REDSTONE.



FIG. 2.—CASTELLATED RIDGE, MT. JEFFERSON.

A characteristic of the topography is the great irregularity of arrangement of the mountains. With the exception of the Presidential Range there are no long ranges. The greater number of peaks are in irregular groups or isolated. The three main ranges, the Presidential, the Carter-Moriah and the Franconia, have a general northeast and southwest direction. The first of these, which contains the tallest peaks of the region, is about 20 miles in length. The high peaks in Waterville and Albany and Mt. Moosilauke, on the western border of the region, are isolated mountains.

The general base level varies from 700 to 1,500 feet elevation, and from this level the mountains rise, for the most part, very abruptly. The slopes are generally steep and the intervening valleys narrow and sloping, with occasional wide intervals. The intervals are flat, and the soil is deep and fertile, furnishing the best farming land in the region.

GEOLOGY.

During the Paleozoic, or tropical, period preceding the ice age, it is probable that the White Mountain region was covered for the most part with forests of beech, basswood, buckeye, pepperidge, and cinnamon. This is indicated by the fact that fossils of these species are found at Brandon, Vt. Long before this period, however, the mountains had been formed. The bases are a porphyritic gneiss, possibly of the later Laurentian period, together with several groups of granite from the early Huronian, the whole having been forced to a high elevation by lateral pressure. The general direction of the ranges is northeast and southwest. The Paleozoic period was succeeded by the ice age, or Cenozoic period, in which no vegetation could have endured. To this period, together with the atmospheric influences upon the mountains since that time, are due the formation of soils throughout the region.

The continental ice sheet advanced from the northwest, the highest mountains offering no barrier to its advance. By grinding the rocks it deposited over the mountains a

layer of gravel and sand, varying from a few feet to 30 feet or more in depth, and fertile because of the potash which is essential to plant life and which is a constituent of gneiss and granite. This action is well illustrated on Mt. Moosilauke. The great stretches of sand extending over Madison, Ossipee, and adjoining townships are a deposit of the ice age. On the Presidential Range large blocks of stone were carried from the northern slopes to the summits, covering the finer earth deposited earlier. As the continental sheet disappeared, it seems to have left glaciers radiating from the mountains in all directions. These carried large boulders with them, which now strew the ground thickly in places, and deposited at frequent intervals lateral and terminal moraines. The finer grinding of the glaciers has deposited the clays which occur in places, but the coarser deposits have rendered much of the land too rocky for agriculture.

One of these glaciers, from two to three thousand feet in thickness, swept the sides of Mts. Moosilauke and Ascutney, in the Connecticut Valley. Other independent glaciers moved down the Pemigewasset and Androscoggin valleys, up the valley of the Peabody River, and down the Crawford Notch and the Saco valley. The even slopes of the hills about the village of Jackson are composed of drift supposed to have come from the earlier sheet, while the boulders deposited upon it are due to the later glacial action.

Throughout the mountains the glacial moraines across the valleys have caused many of the small lakes and ponds. These deposits, being often gravelly, have sometimes been broken through, letting out the water. In some cases this has taken place since the settlement of the country. The bog and swamps bearing spruce, larch, and balsam have similar origin. Bogs rich in peat are not infrequent. Several bogs, however, owe their presence to dams made by beavers. Considerable areas of the higher summits are often covered with peat, which affords a foothold for the shallow roots of spruce and balsam.

Erosion, due to heat, frost, and water, has played an important part both in the formation and particularly in the removal of mountain soil on steep slopes. The decaying mosses and lichens soaked in water form an acid that disintegrates the rocks. Heat and frost aid the process. The Androscoggin Valley, for instance, for two miles below Gorham is filled with rocks and debris cracked off from the surrounding hills. The slides on so many of the mountains, as on Washington, Osceola, Carter, and Tripyramid, the recent fatal slide on Cherry Mountain, and that on Mt. Willey in the early part of the last century, are another form of erosion. Erosion is constantly going on in the mountains, particularly on the high slopes where the timber has been removed by the prevailing method of clear cutting. Here the run-off is far more rapid, often laying bare the rocks and occasionally causing destructive floods below.

CLIMATE.

The climate of New Hampshire varies in no essential from that of the other New England states. The precipitation of approximately 40 inches is ample for all agricultural crops and forest trees suited to the climate. The humidity, averaging at 8 o'clock readings, over 75 per cent. of saturation throughout the year, is very high, although somewhat lower than at certain points on the New England coast. This high degree of humidity greatly conserves the moisture available for vegetative growth, since it checks very markedly both the direct evaporation of moisture from the soil and the excessive transpiration of vegetation in general. The amount of precipitation that falls as snow is very variable, the annual snowfall being not infrequently 40 per cent. above or below the average.

The temperature is on the whole exceedingly favorable for all kinds of forest growth. It is not characterized by extreme variations of heat and cold, although the winters are long. Late frosts in the spring and early frosts in the

fall are to be reckoned with. They frequently do great damage to farm crops.

The following table shows the average monthly mean temperature and rainfall in this region, as shown by the records of the Weather Bureau:

TABLE I.—CLIMATE OF NORTHERN NEW HAMPSHIRE.

Month.	Average temperature.	Average precipitation.
	° F.	Inches.
January	16.0	2.96
February ..	17.4	3.58
March.....	26.4	3.18
April.....	40.7	2.07
May.....	53.9	3.15
June.....	63.8	3.74
July.....	67.2	3.68
August.....	65.0	3.95
September ..	57.2	3.12
October.....	45.6	2.91
November.....	32.2	3.65
December.....	21.0	2.93

DRAINAGE.

Of the four main streams which drain Northern New Hampshire, the Connecticut, the Saco, the Pemigewasset, and the Androscoggin, two, the Saco and Pemigewasset, rise in the White Mountains. The Connecticut has its source in the lakes of the same name in the northern part of the state, and the Androscoggin is formed by the junction of the Magalloway and the outlet of Umbagog Lake, the lower of the large chain of lakes in Maine known as the Rangeley Lakes. Though the Androscoggin flows for some distance through the state, the principal source of its water is in Maine.

The areas of these drainage basins in the territory examined are as follows:

Connecticut River	683,758 acres.
Saco River	444,435 "
Pemigewasset River	343,512 "
Androscoggin River	480,272 "
<hr/>	
Total	1,951,977 acres.

Each of these main river basins is divided up into numerous smaller basins formed by their tributaries. New Hampshire is an excellently watered state. There are innumerable streams and small brooks, springs, ponds, and miniature lakes, as well as a number of larger ones, chief of which, within the section examined, are the Connecticut Lakes in the extreme northern part of the state. There are very few large areas of swamps; aside from a number of small bogs, the country is generally well drained.

OWNERSHIP OF THE LAND.

The greater part of the territory examined is forest land, owned for the most part by large lumber and paper companies. There are also a large number of lumber companies holding comparatively small tracts, and a great deal of land is held in lots of hundred acres more or less by private owners.

The following is approximately the ownership of the area examined:

Large lumber and pulp companies	. . . . .	900,000 acres.
Hotel companies	. . . . .	28,000 "
Small holders of forest land	. . . . .	756,000 "
Agricultural land, small holdings	. . . . .	244,000 "
		<hr/>
Total	. . . . .	1,928,000 acres.

VALUE OF THE LAND.

Up to 1869 the state owned the greater part of the White Mountain region and Coös county. The policy of the state was to dispose of its public lands as fast as possible, and large tracts were sold for almost nothing. During recent times, however, the value of land has increased very rapidly and now, owing to the growing scarcity of spruce in the state, good forest land commands an excellent price.

The best spruce land brings from \$20 to \$30 per acre, according to the stand and quality of the spruce and its accessibility for lumbering. The greater part of the

country, however, is cut over, and much of it badly burned. Such land, with little or no merchantable spruce and covered with hardwoods, is worth from \$2 to \$4 per acre. Burned or abandoned land can be bought for from \$1 to \$2 per acre. Such land often has a good second growth of spruce and balsam. The best second-growth spruce land is rapidly increasing in value, and is being bought up by the large lumber and pulp companies.

CLASSIFICATION OF THE LAND.

The area considered by this report has been mapped with respect to the following natural conditions:

Softwood growth:

Five thousand to ten thousand board feet per acre;

Under five thousand board feet per acre.

Pine.

Hardwood growth:

Fifteen cords and over per acre;

Under 15 cords per acre.

Waste land.

Agricultural land.

Barren land.

Burns.

SOFTWOOD GROWTH.

This includes all merchantable stands of timber yielding over 1,000 board feet of softwoods per acre. The growth consists chiefly of spruce, with balsam, hemlock, and pine in mixture, the last two occurring more or less scatteringly. Hardwoods, chiefly yellow and paper birch, sugar and red maple, popple, and beech, occur in softwood growth in varying proportion, generally predominating in stands averaging less than 5,000 board feet per acre of softwoods.

The reason for considering so small a stand of softwoods as 1,000 board feet per acre, and actually classing it as softwood growth, when as a matter of fact the preponderance of growth is hardwoods, is to realize one of the chief objects of this report; namely, to obtain the total stand of

softwoods in the region under consideration, which, as previously stated, is principally spruce.

For convenience and expediency in estimating, the softwood growth has been divided up into classes according as the yield is, which yield respectively 10,000 board feet and over, from 5,000 to 10,000 board feet, or under 5,000 board feet per acre.

Ten thousand board feet and over per acre.—This includes the most extensive virgin stands of merchantable softwoods, chiefly spruce and balsam. There is very little cut-over land in this class. It is found usually below an elevation of 3,000 feet, and is almost entirely owned by a few large lumber and pulp companies.

Five thousand to ten thousand board feet per acre.—This class includes a large amount of cut-over land from which sawlogs only have been removed, and also considerable areas of virgin forest on the upper slopes, occurring in a zone above the best class of softwoods, and reaching an average altitude of about 3,700 feet. The virgin and cut-over areas of this class can generally be distinguished by their comparatively high or low elevations, although frequently the two areas are contiguous. Such instances are the result of the lower slopes, where the stand of spruce was originally very heavy, having been logged for sawlogs only, while the upper slopes, where the stand was not so good, remained untouched.

Under five thousand board feet per acre.—This division includes all cut-over lands now averaging from 1,000 to 5,000 board feet per acre, and a certain amount of virgin land which forms a narrow belt on some of the upper slopes, immediately below the scrub growth. This division is largely represented in the valleys, which, easily accessible, have in some cases been logged several times. When this class occurs on the high mountain slopes it marks the limit of merchantable timber, and reaches an elevation of about 4,000 feet. On the cut-over areas hardwoods, as a rule, form the bulk of the stand; on the virgin areas balsam pre-

dominates over spruce. The area covered by virgin forest is, however, very limited.

PINE.

This land is situated almost entirely in the southeastern portion of the territory examined. For the most part the stands are almost pure white pine, though with a slight mixture of red pine, and, with the exception of a limited area near Intervale, are entirely second-growth, which has come up chiefly on abandoned farms.

HARDWOOD GROWTH.

This has been separated into two divisions: Fifteen cords and over per acre, and under 15 cords. A division of this sort is essential in order to distinguish between the better class and the very poor growth of hardwoods which comes in immediately after cutting and fires. As the one grades almost imperceptibly into the other, and as there are practically no pure virgin hardwood lands in the region, no convenient basis other than that of yield can be found.

Fifteen cords and over per acre.—For the most part this division includes the large areas from which softwoods have been culled until less than 1,000 board feet remain, and those areas clean cut or burned sufficiently long ago for them to yield now at least 15 cords per acre. In the first case the growth consists of an open stand of mature hardwoods, chiefly yellow and paper birch, sugar maple, and dense stand of popple, birch, maples, and beech, with often quality. In the second case the growth consists of a rather dense stand of popple, birch, maples, and beech, with often a little spruce in mixture.

Under this division is also included a small area, but nevertheless worth noting, of almost pure virgin hardwoods in the vicinity of Bartlett village.

Under fifteen cords per acre.—This division includes practically all land burned over within the last twenty



FIG. 1.—THIRD CONNECTICUT LAKE. CANADIAN BOUNDARY LINE
RUNS ALONG HEIGHT OF LAND.



FIG. 2.—AMMONOOSUC VALLEY NEAR TWIN MOUNTAIN.



FIG. 1.—VIRGIN SPRUCE WITH DENSE BALSAM REPRODUCTION.
MT. JACKSON.



FIG. 2.—VIRGIN SPRUCE FOREST WITH HEMLOCK IN MIXTURE.

years, and land from which the timber has been clean cut. The predominating species are bird cherry, popple, and birch. There is often considerable sugar and red maple and beech, the latter species increasing in proportion every year after cutting. This class is merely an earlier stage of the first class of hardwoods. Often on the higher slopes there is considerable spruce reproduction as well.

WASTE LAND.

This embraces those areas that produce an absolutely valueless growth, such, for instance, as that found on the poorer quality of abandoned land, unmerchantable swamps, and the scrubby growth on the high mountain slopes. On the map the abandoned land and the scrub growth may be distinguished by the relatively low and high situations they occupy. A considerable area in the southeastern townships covered with pitch pine is classed as waste land. The pine occurs in more or less open growth or in small groups, usually with a dense undergrowth of scrub oak. The scrub growth on the upper slopes consists of balsam, spruce, and yellow and paper birch, varying in size from trees which just miss being merchantable to the prostrate shrub at timber line.

AGRICULTURAL LAND.

Practically all the accessible valley lands are given up to agriculture. The great bulk of the farm land lies along the southern and western borders of the region and along the lines of railway. The township of Colebrook is considered the best farming land in the state.

BARREN LAND.

This includes the rocky summits of many mountains above timber line, where less than one third of the ground is covered with scrub growth. The most extensive area is on the crest of the Presidential Range.

BURNS.

Areas run over by fire were mapped to indicate whether the fire occurred in the year 1903 or previously. This distinction was made to show the extent of the forest fires which swept over New Hampshire in the spring immediately preceding the examination. Attention was also paid in the case of each burn to the growth which came up after the fire and which, in every instance, is practically all hardwoods. On the map this is indicated by a hatched color, the color indicating the succeeding growth.

The burns of 1903 are distinguished on the map from previous burns by hatching unaccompanied by any color, no growth having yet manifested itself on the newly burned areas. Unfortunately, the map does not show the relative area of this year's burns in comparison with earlier ones, since a great part of the area burned last spring had been previously burned over, in some instances several times.

For the most part, the fires have started upon and have been confined to cut-over land. The virgin forest is strikingly free from any trace of fire. The subject of forest fires is considered in detail in another part of this report.

AREA OF LAND OF EACH CLASS AND STAND OF TIMBER, BY
DRAINAGE BASINS.

To secure a convenient basis for an estimate of the amount of land of the different classes and the stand of timber in the region, a subdivision of the entire area was made by drainage basins, under the following heads: Saco, Pemigewasset, Ammonoosuc, Israel and Upper Ammonoosuc, Androscoggin, Magalloway and Upper Connecticut. Of these, the Ammonoosuc, Israel and Upper Ammonoosuc, and Upper Connecticut are parts of the Connecticut drainage basin, while the Magalloway basin is that part of the basin of the Maine river of the same name which lies in New Hampshire, and which is tributary to the Androscoggin. A detailed description of each of these drainage basins is made in another part of this report.

The area of land of each class in the whole region was carefully mapped. The estimate of timber was made by eye, checked from time to time by taking sample acres in various localities, 219 acres being measured in all. The estimated stand includes all trees six inches and over in diameter breasthigh. To obtain a definite figure for the best class of softwood land, that over 10,000 board feet, 52 acres of this type were measured in various places from Waterville to northern Pittsburg. The average of these, allowing liberally for cull, was found to be 16,000 board feet per acre. Accordingly this figure has been used in working up the estimate. No attempt has been made to distinguish between spruce and balsam. The latter forms from one to 20 per cent. of the total stand according to situation; probably 10 per cent. would be a liberal average for all localities. In mapping the hardwoods the division into classes of over and under 15 cords per acre was made rather to show the condition of the growth and the relative ages of the cuttings than as an estimate, although it serves the latter purpose as well. The pine was not estimated, as it is practically all second-growth and usually not of merchantable size.

TABLE II.—AREAS AND YIELDS OF NORTHERN NEW HAMPSHIRE DRAINAGE BASINS.

Class of land.	Saco.	Pemigewasset.	Ammonoosuc.	Israel and Up- per Ammo- nosuc.	Androscoggin.	Magalloway.	Upper Con- necticut.	Total.
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
SOFTWOODS:								
Under 5,000 board feet per acre	47,025	124,451	33,240	87,443	95,562	69,000	154,920	611,641
5,000-10,000 board feet per acre	47,931	36,430	20,596	24,717	86,129	36,320	42,880	295,003
Over 10,000 board feet per acre	5,786	30,274	4,004	2,571	5,673	25,360	9,280	82,948
Pine.....	32,216	256	.....	520	720	.....	1,040	34,752
HARDWOODS:								
Under 15 cords per acre	39,067	17,886	14,428	10,987	68,977	800	10,440	162,585
Over 15 cords per acre	154,448	51,712	16,633	31,115	38,619	.....	.....	292,527
Agricultural land.....	44 409	40,422	29,571	16,356	24,678	1,320	87,280	244,036
Burns—1903.....	11,658	6,351	13,831	36,221	10,314	200	5,680	84,255
Waste land.....	53,581	33,452	8,972	7,944	5,368	1,120	4,080	114,517
Barren land.....	1,420	717	1,264	585	1,992	.....	.....	5,978
Water.....	6,894	1,561	.....	2,040	6,280	1,840	5,120	23,735
Total.....	444,435	343,512	142,539	220,499	344,312	135,960	320,720	1,951,977

YIELD OF SOFTWOODS—MILLION BOARD FEET.

	546	1,007	285	402	928	816	780	4,764
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From this table it will be seen that the stand of softwoods in Northern New Hampshire is estimated at 4,764 million board feet.

Better to illustrate the present forest conditions, the following table has been prepared, bringing out the relative areas of cut-over and virgin forest in this region.

TABLE III.—AREA OF NORTHERN NEW HAMPSHIRE LAND AND WATER.

Virgin merchantable forest	200,000 acres.
Cut-over or culled land.....	1,363,711 "
Barren and waste land.....	120,495 "
Total forest land.....	1,684,206 "
Agricultural land.....	244 036 "
Water.....	23,735 "
Total.....	1,951,977 "

From this it will be seen that virgin forest forms only about 12 per cent. of the total forest area examined.

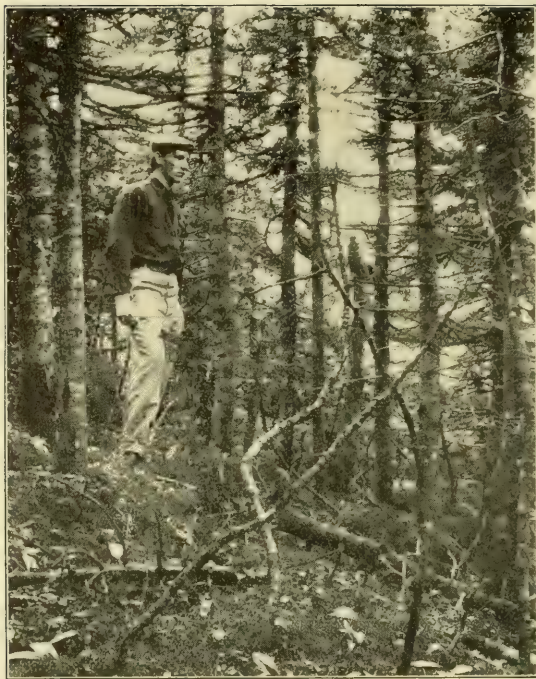


FIG. 1.—PURE GROWTH OF UNMERCHANTABLE BALSAM AT 3,800 FEET ELEVATION ON MT. WEBSTER.



FIG. 2.—BALSAM AT 5,211 FEET ELEVATION.



FIG. 1.—SPRUCE FLAT NEAR THE CONNECTICUT LAKES. THE BAL-SAM REPRODUCTION ON THESE FLATS IS VERY DENSE.



FIG. 2.—SPRUCE SLOPE, MT. MAGALLOWAY.

DESCRIPTION OF THE FOREST.

FOREST CONDITIONS.

In the state of New Hampshire as a whole two broadly distinguished types of forest occur. On the basis of these types the state divides itself into what may for convenience be called the northern and the southern divisions. Strictly speaking, these terms are not entirely accurate, for elevation, quite as much as latitude, laid down the boundary between them: on the east and west the southern division extends up the lowlands as far as the Saco and Ammonoosuc rivers, respectively, while the northern includes, in addition to Coös county, the whole of the White Mountain region, extending as far south as the towns of Waterville and Albany. The original forest of the southern division was mainly hardwoods and pine, with the hardwoods preponderating—a preponderance which the early lumbering of the pine has largely increased. Both white pine and hemlock, however, are more abundant here at the present time than farther north. But hardwoods are the characteristic species.

Originally the entire northern division was covered with a dense forest of conifers. It was primarily a spruce country, and the spruce here attained fine dimensions. White pine, too, covered large areas and was mixed with spruce over much of the region. Balsam occurred in mixture on the upper slopes and in the lower, moister localities. There was originally very little pure hardwood forest in the northern part of the state, where it was confined to the lower slopes, with spruce in mixture.

The best spruce grew on hardwood land, where the soil is deeper and richer than on the steeper slopes. These lower slopes were, moreover, most easy of access to the lumberman, and in consequence were among the first to be cut after the land in the valleys had been lumbered. Owing to presence of the hardwoods in mixture on these slopes, the growth that came up after lumbering was not spruce or

balsam, but hardwoods. Where fire has once run over such a slope after lumbering, the growth of sprouts that comes in is very dense, and the character of the forest is materially changed.

The most characteristic trees of the northern division are the red and white spruce, balsam, sugar maple, beech, and white cedar.

In the region examined the southern division takes on somewhat the character of a transition zone between the northern and southern parts of the state. Some of the southern species, like the white and red oaks, here reach their northern limits, and mingle with those more characteristic of the north. But the hardwoods still remain dominant. Of typical northern trees, the white spruce and cedar do not occur in the south.

In the White Mountain region red spruce and balsam are the prevailing species, and reach the highest elevations on the mountains. North of the White Mountains, these trees with white cedar and, around the Connecticut Lakes, with white spruce, are the chief conifers. Lumbering has brought about a great change in the species. Hemlock and white pine, once common at low elevations and along the valleys, are now of but little importance in the forest. Of the hardwoods, yellow birch, sugar maple, and beech are the commonest, and have greatly increased in numbers on the cut-over land. But little of the original forest is now left. Where was formerly a heavy stand of spruce and balsam is now a hardwood forest, with a little spruce in mixture. Where fires have occurred, there is a tangle of bird cherry, yellow birch, and aspen.

FOREST TYPES.

The original forest types of the region examined consisted of spruce flat, hardwood land and spruce slope. Of these the spruce slopes covered by far the greater part of the country. These types, while generally holding good, show considerable variation in different localities.

Spruce Flat.—Spruce flats occur in the moister, lower situations, on the level or rolling land around lakes and streams and in the valleys. Spruce and balsam are the chief species; and on the wetter soils, black spruce, white cedar, and larch are also common. There is often considerable yellow birch and red maple. Spruce does not form as good a timber tree on these flats as on higher ground. White pine and hemlock formerly occurred in great abundance on these lowlands, but have been almost entirely cut out. Windfall is particularly common; exceptionally tall trees are very liable to be thrown.

Spruce flat is a very common type in New Hampshire, especially in the country north of the White Mountain district. Owing, however, to their accessibility, they have been almost entirely cut over, and but little virgin forest of this type now remains. Second growth on these flats is usually excellent, softwoods greatly predominating over the hardwoods.

The following table shows the average stand on this type in virgin forest in Coös county:

TABLE IV.—SPRUCE FLAT.—PITTSBURG TOWNSHIP.

[Average of 10 acres.]

Diameter breasthigh.	Number of trees per acre.							
	Spruce.	Balsam.	Yellow birch.	Paper birch.	Sugar maple.	Black ash.	Moun- tain ash.	Moun- tain maple.
<i>Inches.</i>								
2	6.90	63.80	0.40	0.60	.....	.....	0.80	0.90
3	12.40	56.60	.90	1.70	.....	.....	.80	.....
4	12.50	41.00	.30	1.50	.....	.10	.60	.....
5	16.10	31.50	.70	5.00	.....	.....	.10	.....
6	14.30	18.60	.30	3.20	.....	.....	.....	.....
7	14.90	19.20	.30	2.10	.....	.....	.....	.....
8	17.30	15.80	.30	2.40	.....	.....	.....	.....
9	16.40	9.00	.....	2.30	.....	.....	.....	.....
10	16.00	7.90	.40	1.40	.....	.....	.....	.....
11	13.70	4.50	.....	.70	.....	.....	.....	.....
12	12.00	3.90	.10	.30	.....	.....	.....	.....
13	10.10	1.10	.30	.80	.10	.....	.....	.....
14	8.90	1.00	.40	.60	.....	.....	.....	.....
15	7.50	.70	.40	.20	.....	.....	.....	.....
16	6.50	.10	.20	.10	.....	.....	.....	.....
17	5.50	.30	.20	.....	.....	.....	.....	.....
18	3.40	.....	.20	.....	.....	.....	.....	.....
19	1.50	.....	.30	.....	.....	.....	.....	.....
20	1.60	.....	.20	.....	.....	.....	.....	.....
21	1.20	.....	.10	.....	.....	.....	.....	.....
22	.40	.....	.10	.....	.....	.....	.....	.....
23	.50	.....	.....	.....	.....	.....	.....	.....
24	.10	.....	.....	.....	.....	.....	.....	.....
25	.10	.....	.....	.....	.....	.....	.....	.....
35	.....	.....	.10	.....	.....	.....	.....	.....
Total.....	199.80	275.00	6.20	22.90	.10	.10	2.30	.90

TREES 10 INCHES AND OVER IN DIAMETER BREASTHIGH.

.....	89.00	19.50	3.00	4.10	.10
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Hardwood Land.—On the lower slopes and deeper, better soils, hardwoods form a large part of the growth. Here yellow birch, sugar maple, and beech are the characteristic trees, with considerable spruce in mixture. The spruce forms a better timber tree on these lower slopes than in any other situations.

These hardwood slopes rarely extend above an altitude of 2,400 feet. The forest is, as a rule, dense and clean, with a heavy shade. The ground cover consists chiefly of witch hobble, mountain maple and mountain ash. The shade is too heavy for good softwood reproduction, but the hardwood reproduction, particularly sugar maple and beech, is often very thick, with a dense matting of small

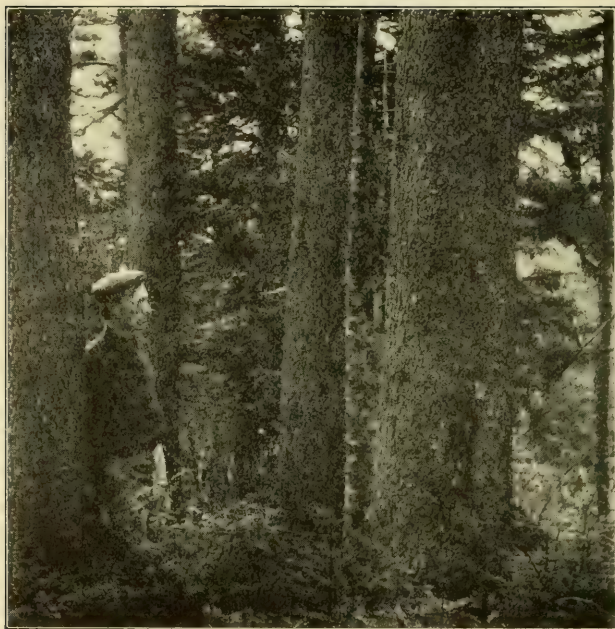


FIG. 1.—SPRUCE AT 2,900 FEET ELEVATION. MT. WEBSTER.



FIG. 2.—UPPER SPRUCE SLOPE. MT. WEBSTER. BALSAM DEAD AND DYING.

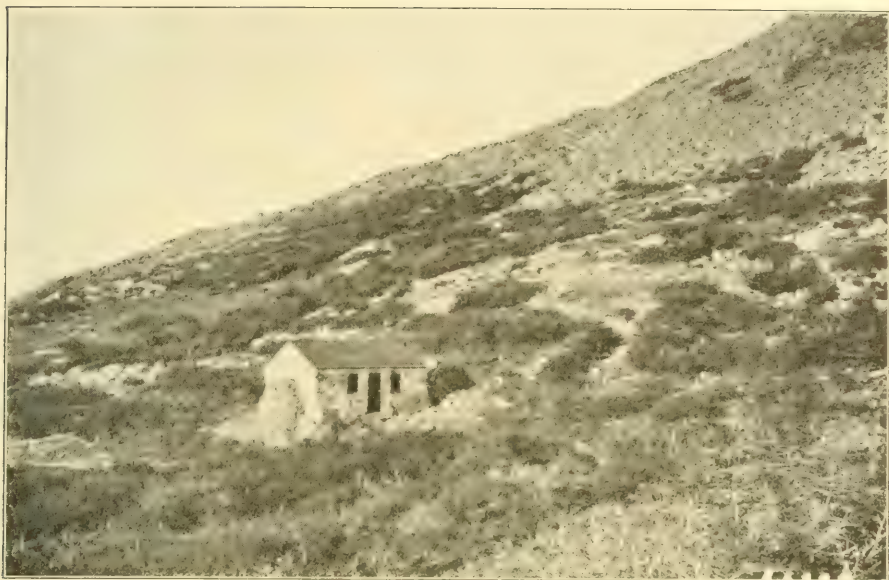


FIG. 1.—APPALACHIAN MOUNTAIN CLUB'S CABIN NEAR SUMMIT OF
MT. MADISON.



FIG. 2.—UPPER SLOPES OF THE PRESIDENTIAL RANGE.

seedlings covering the ground. Very little of this type is now left in virgin forest, except in the upper part of the Magalloway watershed, since it was easily lumbered.

The following tables show the stand on this type in various parts of the state:

TABLE V.—HARDWOOD LAND.—WATERVILLE TOWNSHIP.
[Average of 53 acres.]

Diameter breast- high.	Number of trees per acre.										
	Spruce.	Balsam.	Hemlock.	Yellow birch.	Sugar maple.	Beech.	Paper birch.	Red maple.	White ash.	Mountain ash.	Other species.
<i>Inches.</i>											
2	26.44	5.48	.18	4.48	3.98	14.08	.....	.02	.02	.02	15.50
3	6.00	1.30	.08	1.48	.86	3.36	.....	.....	.....	.02	2.08
4	7.14	1.60	.14	2.22	.86	4.56	.....	.04	.....	.....	.56
5	6.00	.98	.18	2.68	.86	4.42	.02	.06	.02	.....	.42
6	6.40	.52	.12	2.10	.50	3.72	.02	.12	.....	.....	.14
7	4.40	.34	.12	1.94	.62	2.82	.10	.02	.....	.....	.08
8	4.12	.10	.14	2.06	.54	3.36	.08	.....	.04	.02	.08
9	3.76	.14	.12	1.66	.36	3.36	.04	.....	.04	.....	.....
10	3.24	.02	.26	1.98	.44	3.28	.08	.08	.....	.....	.....
11	3.00	.10	.02	2.02	.52	3.36	.10	.08	.....	.....	.....
12	2.84	.06	.06	2.08	.58	3.76	.10	.08	.04	.....	.....
13	2.28	.02	.18	1.86	.66	3.72	.04	.04	.....	.....	.....
14	2.04	.....	.20	2.20	.64	4.26	.08	.02	.02	.....	.....
15	1.86	.02	.12	1.56	.32	3.38	.04	.....	.....	.....	.....
16	1.84	.....	.18	1.48	.56	2.36	.02	.02	.....	.....	.....
17	1.70	.....	.16	1.16	.50	1.74	.....	.06	.....	.....	.....
18	1.30	.....	.20	1.14	.36	1.74	.....	.02	.....	.....	.....
19	.62	.....	.12	1.10	.38	1.14	.....	.....	.02	.....	.....
20	.88	.....	.12	.82	.26	.98	.02	.02	.....	.....	.....
21	1.00	.....	.16	.84	.38	.70	.....	.....	.....	.....	.....
22	.62	.....	.14	.80	.42	.36	.....	.....	.....	.....	.....
23	.18	.....	.10	.88	.28	.04	.....	.....	.....	.....	.....
24	.20	.....	.16	.58	.30	.06	.....	.....	.....	.....	.....
25	.10	.....	.06	.30	.22	.04	.....	.....	.....	.....	.....
26	.04	.....	.12	.40	.20	.02	.....	.....	.....	.....	.....
27	.06	.....	.12	.18	.14	.....	.....	.....	.....	.....	.....
28	.04	.....	.....	.16	.14	.....	.....	.....	.....	.....	.....
29	.02	.....	.02	.12	.....	.....	.....	.....	.....	.....	.....
30	.....	.....	.10	.16	.04	.....	.....	.....	.02	.....	.....
31	.....	.....	.02	.08	.....	.....	.....	.....	.....	.....	.....
32	.....	.....	.04	.08	.02	.....	.....	.....	.....	.....	.....
33	.....	.....	.....	.02	.....	.....	.....	.....	.....	.....	.....
34	.....	.....	.....	.04	.....	.....	.....	.....	.....	.....	.....
35	.....	.....	.....	.02	.....	.....	.....	.....	.....	.....	.....
36	.....	.....	.02	.08	.....	.....	.....	.....	.....	.....	.....
37	.....	.....	.02	.02	.....	.....	.....	.....	.....	.....	.....
38	.....	.....	.....	.04	.....	.....	.....	.....	.....	.....	.....
39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	.....	.....	.....	.02	.....	.....	.....	.....	.....	.....	.....
Total.....	88.12	10.68	3.78	40.84	15.94	70.62	.74	.68	.20	.06	18.86

TREES 10 INCHES AND OVER IN DIAMETER BRESTHIGH.

.....	23.86	.22	2.70	22.22	7.36	30.94	.48	.42	.08
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TABLE VI.—HARDWOOD LAND.—PITTSBURG TOWNSHIP.

[Average of 12 acres.]

Diameter breast- high.	Number of trees per acre.									
	Spruce.	Balsam.	Yellow birch.	Sugar maple.	Beech.	Black ash.	Paper birch.	White ash.	White elm.	Other species.
<i>Inches.</i>										
2	2.58	7.00	1.25	10.67	.33	.17	.....	.....	.....	2.83
3	2.00	11.50	2.00	8.17	.83	.33	.....	.....	.....	1.08
4	2.42	14.83	1.33	10.00	1.33	.....	.....	.....	.....	.....
5	2.08	12.92	2.08	7.58	1.42	.33	.08	.....	.....	.....
6	2.17	9.56	2.08	6.50	1.00	.17	.....	.08	.....	.....
7	.92	5.42	2.17	5.67	1.17	.67	.....	.....	.....	.08
8	1.67	4.50	1.50	6.06	1.00	.25	.17	.....	.....	.....
9	1.33	2.75	2.42	5.42	.92	.42	.....	.....	.....	.....
10	1.67	2.08	1.83	6.25	.75	.08	.....	.....	.....	.....
11	1.08	1.17	1.83	5.75	.17	.58	.....	.....	.....	.....
12	1.00	.50	1.50	4.67	.08	.08	.08	.....	.....	.....
13	1.25	.17	2.00	4.00	.....	.25	.....	.....	.....	.....
14	1.00	.25	1.67	4.75	.17	.17	.08	.....	.....	.....
15	.75	.08	2.00	3.00	.08	.17	.....	.....	.....	.....
16	.75	.....	1.50	3.42	.....	.08	.....	.....	.....	.....
17	.58	.....	1.33	3.17	.....	.08	.....	.....	.....	.....
18	.58	.....	1.42	1.83	.....	.08	.....	.....	.....	.....
19	.25	.....	1.25	1.58	.....	.....	.....	.....	.....	.....
20	.33	.....	1.50	1.33	.....	.....	.....	.....	.....	.....
21	.25	.....	.67	1.00	.....	.....	.....	.....	.....	.....
22	.17	.....	.92	.42	.....	.....	.....	.....	.....	.....
23	.08	.....	.75	.17	.....	.....	.....	.....	.....	.....
24	.08	.....	.33	.25	.....	.....	.....	.....	.08	.....
25	.08	.....	.33	.08	.....	.....	.....	.....	.....	.....
26	.....	.....	.42	.....	.....	.....	.....	.....	.....	.....
27	.....	.....	.50	.....	.....	.....	.....	.....	.....	.....
28	.....	.....	.08	.....	.....	.....	.....	.....	.....	.....
29	.....	.....	.08	.....	.....	.08	.....	.....	.....	.....
30	.....	.....	.42	.....	.....	.....	.....	.....	.....	.....
35	.....	.....	.08	.....	.....	.....	.....	.....	.....	.....
Total.....	25.07	72.73	37.24	101.76	9.25	3.91	.41	.08	.08	3.99

TREES 10 INCHES AND OVER IN DIAMETER BREASTHIGH.

.....	9.90	4.25	22.41	41.67	1.25	1.57	.1608
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Spruce Slope.—This type occurs on the steeper slopes where the soil is shallow and the hardwoods do not thrive so well. The principal species are spruce and balsam, in varying proportions, and yellow birch, changing often to paper birch on the upper slopes. This type merges on the upper side into unmerchantable spruce and balsam, and finally runs out into a scrubby growth near the summits.

The stand is usually dense. Where the forest has been

undisturbed, the ground cover is moss. The balsam reproduction is often very thick, and the spruce reproduction generally fair.

Spruce slopes cover the greatest area of any of the forest types in Northern New Hampshire. Where these slopes are cut over, if fire is kept out, the softwoods return in the second growth. Where fire runs over the ground after lumbering, in many cases the entire soil is burned and washed away and the process of return to forest conditions is very slow. In some cases, as on the Sugar Loaves in the township of Carroll, it will never be complete.

The following tables show the average stand on spruce slopes and on upper spruce slopes in various parts of the state:

TABLE VII.—HARDWOOD LAND.—LOW AND BURBANK GRANT.

[Average of 5 acres.]

Diameter breast- high.	Number of trees per acre.									
	Spruce.	Balsam.	Hemlock.	Yellow birch.	Sugar maple.	Beech.	Paper birch.	Mountain maple.	Striped maple.	Other species.
<i>Inches.</i>										
2	17.60	10.40	.80	23.00	18.40	10.00	.....	27.00	28.40	.20
3	11.60	7.80	.80	11.80	6.40	6.20	.20	15.40	14.80	.....
4	7.20	5.80	.60	7.40	5.80	5.60	.....	3.00	5.20	.80
5	6.00	4.00	.60	5.40	4.20	4.20	.....	.40	1.80	.20
6	6.80	1.60	.80	1.80	2.60	3.80	.20	.20	1.00	.40
7	6.60	.60	.60	1.80	1.40	3.20	.20	.....	.40	.20
8	3.80	.80	.60	1.40	.20	2.60	.....	.....	.....	.....
9	5.80	.60	.....	1.20	.80	3.60	.20	.....	.20	.....
10	3.80	1.00	.20	.80	.60	2.20	.....	.....	.....	.....
11	2.80	.20	1.00	.80	.....	2.60	.....	.....	.....	.....
12	4.00	.20	.....	.40	.40	2.20	.20	.....	.....	.....
13	2.20	.20	.40	1.20	.20	2.20	.....	.....	.....	.....
14	4.40	.....	.60	1.20	.80	1.40	.20	.....	.....	.....
15	2.20	.20	.20	.40	.40	1.20	.....	.....	.20	.20
16	2.20	.....	.20	.80	.20	3.20	.....	.....	.....	.....
17	3.80	.....	.20	1.60	.60	1.60	.....	.....	.....	.....
18	2.10	.....	.....	2.00	.....	.80	.....	.....	.....	.....
19	1.80	.....	.60	1.80	.20	.20	.....	.....	.20	.....
20	.60	.....	.....	.60	.20	.40	.....	.....	.....	.....
21	.20	.....	.....	.80	.....	.....	.20	.....	.....	.....
22	.40	.....	.20	1.60	.....	.....	.....	.....	.....	.....
23	.40	.....	.....	.80	.20	.....	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.20	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	.60	.....	.....	.60	.20	.....	.....	.....	.....	.....
27	.....	.....	.20	.20	.....	.....	.....	.....	.....	.....
28	.....	.....	.....	1.00	.....	.....	.....	.....	.....	.....
29	.40	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	.....	.....	.20	.....	.....	.....	.....	.....	.....	.....
Total.....	97.30	33.40	8.80	70.40	43.80	57.20	1.60	46.00	52.20	2.00

TREES 10 INCHES AND OVER IN DIAMETER BREASTHIGH.

.....	31.90	1.80	4.00	16.60	4.00	18.00	.8040	.20
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TABLE VIII.—SPRUCE SLOPE.—WATERVILLE TOWNSHIP.

[Average of 65 acres.]

Diameter breast- high.	Number of trees per acre.									
	Spruce.	Balsam.	Hemlock.	White pine.	Yellow birch.	Sugar maple.	Beech.	Paper birch.	Red maple.	Other species.
<i>Inches.</i>										
2	22.20	13.06	.14	.....	3.52	.42	.65	.19	.12	1.86
3	15.51	5.89	.11	.....	4.28	.32	.40	.38	.15	.48
4	14.28	4.94	.15	.....	4.86	.12	.35	1.17	.26	.23
5	12.94	3.46	.32	.....	4.58	.23	.35	1.31	.20	.14
6	11.20	2.37	.23	.....	3.40	.22	.35	1.41	.17	.06
7	10.48	1.71	.14	.....	2.88	.15	.28	1.25	.29	.06
8	10.45	1.60	.23	.....	2.72	.17	.26	1.69	.14	.02
9	11.14	.97	.23	.02	2.14	.20	.22	1.17	.23	.....
10	11.03	.65	.32	.02	2.46	.23	.31	1.18	.22	.....
11	10.29	.29	.28	.....	1.57	.17	.23	.85	.18	.....
12	10.38	.37	.11	.....	1.57	.09	.35	.54	.03	.02
13	9.12	.25	.11	.....	1.52	.09	.29	.35	.03	.....
14	9.22	.05	.17	.....	1.40	.20	.29	.25	.08	.....
15	7.52	.08	.06	.02	1.28	.09	.18	.14	.06	.....
16	7.89	.03	.15	.02	1.09	.06	.18	.09	.....	.....
17	5.80	.....	.12	.....	.86	.09	.09	.05	.....	.....
18	5.12	.....	.66	.....	.91	.....	.09	.05	.....	.....
19	3.40	.....	.08	.....	.75	.02	.02	.03	.....	.....
20	2.48	.02	.06	.....	.80	.03	.02	.02	.....	.....
21	2.34	.....	.08	.....	.68	.03	.....	.05	.....	.....
22	1.18	.....	.05	.....	.57	.02	.....	.02	.....	.....
23	.68	.....	.02	.02	.25	.02	.....	.....	.....	.....
24	.45	.....	.03	.....	.23	.02	.....	.....	.....	.....
25	.29	.....	.06	.....	.12	.....	.....	.....	.....	.....
26	.11	.....	.03	.....	.20	.....	.....	.....	.....	.....
27	.15	.....	.03	.....	.09	.....	.....	.....	.....	.....
28	.09	.....	.02	.....	.02	.....	.....	.....	.....	.....
29	.....	.....	.02	.....	.03	.....	.....	.....	.....	.....
30	.....	.....	.....	.....	.05	.....	.....	.....	.....	.....
31	.....	.....	.....	.....	.02	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
33	.....	.....	.....	.....	.02	.....	.....	.....	.....	.....
34	.....	.....	.....	.....	.02	.....	.....	.....	.....	.....
35	.....	.....	.....	.....	.02	.....	.....	.....	.....	.....
40	.....	.....	.....	.....	.02	.....	.....	.....	.....	.....
Total....	195.74	35.74	3.41	0.10	44.93	2.99	4.91	12.19	2.16	2.87

TREES 10 INCHES AND OVER IN DIAMETER BREASTHIGH.

.....	87.54	1.74	1.86	.08	16.55	1.16	2.05	3.62	.60	.02
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TABLE IX.—SPRUCE SLOPE.—PRESIDENTIAL RANGE.

[Average of 35½ acres.]

Diameter breast- high.	Number of trees per acre.									
	Spruce.	Balsam.	Hemlock.	Yellow birch.	Paper birch.	Sugar maple.	Red maple.	Beech.	Mountain ash.	Other species.
<i>Inches.</i>										
2	24.72	46.72	.45	2.87	.68	.19	.34	.....	2.26	5.69
3	16.15	25.66	.49	3.77	1.40	.08	.08	.....	1.40	2.60
4	15.77	17.43	.64	2.87	1.74	.15	.....	.....	.60	.46
5	11.62	13.77	.26	3.09	2.23	.15	.04	.....	.53	.12
6	8.68	8.56	.37	1.61	1.52	.11	.....	.03	.25	.06
7	6.25	6.70	.45	1.41	2.17	.06	.....	.....	.17	.03
8	7.35	5.01	.34	1.44	1.72	.06	.03	.....	.14	.....
9	7.04	3.72	.39	.99	1.46	.06	.....	.....	.....	.....
10	6.82	2.82	.34	.96	1.86	.....	.....	.03	.....	.....
11	6.70	1.52	.23	.96	.93	.....	.....	.06	.....	.....
12	6.42	1.04	.45	.62	1.04	.11	.....	.....	.....	.....
13	6.93	.82	.14	.70	.76	.....	.....	.....	.....	.....
14	6.85	.42	.11	.59	.45	.03	.....	.....	.....	.....
15	6.28	.31	.20	.51	.28	.....	.....	.....	.....	.....
16	6.00	.14	.20	.59	.25	.03	.....	.....	.....	.....
17	4.76	.14	.20	.54	.17	.....	.....	.....	.....	.....
18	4.39	.03	.03	.68	.20	.....	.....	.....	.....	.....
19	2.85	.....	.14	.34	.06	.....	.....	.....	.....	.....
20	2.99	.06	.17	.23	.....	.....	.....	.....	.....	.....
21	2.03	.....	.06	.23	.03	.....	.....	.....	.....	.....
22	1.80	.03	.....	.17	.....	.....	.....	.....	.....	.....
23	1.75	.....	.03	.14	.....	.....	.....	.....	.....	.....
24	.59	.....	.06	.14	.....	.....	.....	.....	.....	.....
25	.56	.....	.....	.06	.....	.....	.....	.....	.....	.....
26	.28	.....	.03	.03	.....	.....	.....	.....	.....	.....
27	.08	.....	.....	.03	.....	.....	.....	.....	.....	.....
28	.....	.....	.03	.06	.....	.....	.....	.....	.....	.....
29	.08	.....	.....	.06	.....	.....	.....	.....	.....	.....
30	.....	.....	.03	.....	.....	.....	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.03	.....	.....	.....	.....	.....	.....
33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34	.....	.....	.03	.03	.....	.....	.....	.....	.....	.....
Total.....	165.74	134.90	5.87	25.75	18.95	1.03	.49	.12	5.35	8.96

TREES 10 INCHES AND OVER IN DIAMETER BREAHTHIGH.

.....	63.16	7.33	2.48	7.70	6.03	.1709
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TABLE X.—SPRUCE SLOPE—PITTSBURG TOWNSHIP.

[Average of 10 acres.]

Diameter breasthigh.	Number of trees per acre.					
	Spruce.	Balsam.	Yellow birch.	Paper birch.	Mountain ash.	Mountain maple.
<i>Inches.</i>						
2	2.80	31.30	1.00	0.90	1.40	1.70
3	5.90	38.50	2.10	2.10	.30	.....
4	6.20	34.50	2.40	1.70	.60	.....
5	7.30	25.50	2.10	6.00	.20	.....
6	7.00	18.80	2.00	3.30	.10	.....
7	7.70	13.10	1.20	1.70	.....	.....
8	9.20	12.40	2.20	3.50	.....	.....
9	9.70	8.10	1.60	3.30	.....	.....
10	11.20	6.40	1.50	2.70	.....	.....
11	7.40	3.00	1.50	1.20	.....	.....
12	12.40	2.70	.80	1.10	.....	.....
13	8.90	1.70	.90	1.20	.....	.....
14	8.30	.60	.90	.40	.....	.....
15	7.50	.40	.90	.30	.....	.....
16	6.80	.30	1.00	.10	.....	.....
17	5.50	.....	1.00	.40	.....	.....
18	5.00	.....	.60	.20	.....	.....
19	3.10	.....	.30	.10	.....	.....
20	4.20	.....	.40	.....	.....	.....
21	2.50	.....	.60	.....	.....	.....
22	1.90	.....	.10	.....	.....	.....
23	.70	.....	.10	.....	.....	.....
24	.30	.....	.....	.....	.....	.....
25	.20	.....	.10	.....	.....	.....
26	.10	.....	.20	.....	.....	.....
27	.20	.....	.....	.....	.....	.....
30	.10	.....	.....	.....	.....	.....
Total	140.10	187.30	25.50	30.20	2.60	1.70

TREES 10 INCHES AND OVER IN DIAMETER BREASTHIGH.

	86.30	15.10	10.90	7.70
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TABLE XI.—UPPER SPRUCE SLOPE—WATERVILLE TOWNSHIP.

[Average of 5 acres.]

Diameter Breasthigh.	Average number of trees per acre.				
	Spruce.	Balsam.	Paper birch.	Yellow birch.	Mountain ash.
<i>Inches.</i>					
2	83.60	236.20	.60	3.00	.20
3	29.00	160.40	2.00	5.20	.20
4	36.20	111.20	4.20	1.20	.40
5	37.00	79.00	5.20	1.00	.20
6	60.20	55.00	5.00	.40	.....
7	11.20	20.40	1.20	.20	.....
8	22.20	14.80	3.00	.....	.....
9	18.60	11.00	1.60	.....	.....
10	18.20	4.80	1.60	.....	.....
11	3.40	1.00	.40	.....	.....
12	6.00	1.00	.60	.20	.....
13	1.60	.....	.40	.....	.....
14	.60	.20	.40	.40	.....
15	.60	.....	.....	.....	.....
16	1.00	.....	.....	.....	.....
Total	329.40	695.00	26.20	11.60	1.00
TREES 10 INCHES AND OVER IN DIAMETER BREASTHIGH.					
	31.40	7.00	3.40	.60	.....



FIG. 1.—STUNTED GROWTH OF SPRUCE AND BALSAM ON SUMMIT OF
MT. WEBSTER. ELEVATION, 3,876 FEET.



FIG. 2.—DENSE MATTING OF SPRUCE ON MT. ADAMS AT AN ELEVATION
OF 5,200 FEET.



VIRGIN WHITE PINE AT INTERVALE.

TABLE XII.—UPPER SPRUCE SLOPE—LOW AND BURBANK GRANT.

[Average of 1½ acres.]

Diameter Breasthigh.	Number of trees per acre.				
	Spruce.	Balsam.	Paper birch.	Yellow birch.	Mountain ash.
<i>Inches.</i>					
2	66.00	174.67	37.33	2.00	2.00
3	49.33	202.67	77.33	.67	2.00
4	13.33	140.00	70.67	.67	.67
5	8.00	84.67	38.00	.....	1.33
6	2.67	46.67	30.67	.....	2.00
7	1.33	24.67	13.33	.....	.67
8	.....	10.00	5.33	.....	.67
9	.....	4.00	5.33	.....	.....
10	.67	4.67	4.67	.....	.....
11	.67	2.00	4.00	.....	.....
12	.....	.67	2.00	.....	.....
13	.....	.67	4.00	.....	.....
14	.....	.67	.67	.....	.....
15	.....	.....	2.67	.....	.....
16	.....	.....	.....	.....	.....
17	.....	.....	.67	.....	.....
Total	142.00	700.03	296.67	3.34	9.34

TREES 10 INCHES AND OVER IN DIAMETER BREASTHIGH.

	1.34	8.68	18.68
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Aside from these main types there are several others covering comparatively small areas. Tracts of low, level, sandy land along the Saco River bear, in places, a nearly pure growth of pitch pine, and large areas in the same section that were originally white pine land have now come up to good stands of second-growth white pine.

There is practically no real swamp land in Northern New Hampshire, although in places the spruce flats approach such a type. There are, however, small areas of swamp or spruce bogs, occurring chiefly in the northern part of Coös county. These have a very dense, scrubby growth of black and red spruce and balsam. Such areas are, however, too small in extent to constitute a general type.

The original types are often greatly confused and changed by lumbering. Over large areas that once had a heavy stand of spruce or pine there is now a poor growth of hardwoods. But, in general, the type will be evident in the reproduction and the forest will eventually revert to the original condition. On the hardwood land, however, the spruce, once removed, will never return in large numbers.

DESCRIPTION BY TOPOGRAPHIC SUBDIVISIONS.

As has already been said, the entire area under discussion was subdivided into drainage basins, the aggregate of which constitutes the Northern New Hampshire region as examined. A detailed description of each of these basins will presently be given; but preliminary to this the forests of the Presidential and Carter Mountain ranges will be separately described. It will be understood, however, that these forests are parts of those to be presently considered under their several drainage basins, and are here selected for particular description, not as constituting areas distinct from the various watersheds there described, but because their character is such as to make it convenient to take them up by themselves.

FORESTS OF THE PRESIDENTIAL RANGE.

Physiography.—The Presidential Range is, topographically, the most important range in the White Mountains. In it are included nine peaks with elevations of over 5,000 feet. The range has a general northeast and southwest direction. It is popularly considered as extending only from Mt. Madison on the north to Mt. Webster on the south, and includes the following peaks: Madison, the three Adamses, Jefferson, Clay, Washington, Monroe, Franklin, Pleasant Dome, Clinton, and Webster. This stretch of country is about 15 miles long by five miles in breadth, and contains about 50,000 acres. Pine Mountain in the north and Rocky Branch and Montalban Ridges in the south, extending to the villages of Bartlett and Jericho, are properly also parts of the range. If these are included, the area is approximately 150,000 acres.

Drainage.—This range is the source of five rivers by which it is drained: The Saco, Ammonoosuc, Israel, Moose and Peabody. The country south of a line drawn from Crawford's to the summit of Mt. Washington is drained by the Saco River, with several good-sized tributaries, Dry River, Rocky Branch, and Glen Ellis River. North of this line the drainage is by the Ammonoosuc and Israel, flowing northwest into the Connecticut River, and the Moose and Peabody, flowing northeast into the Androscoggin River.

Soil.—The underlying rock is granitic gneiss. By disintegration and mixture with organic matter it forms a loamy sand. The depth of the soil varies with the elevation, aspect and gradient. In the valleys and on the lower slopes, the soil is generally deep, and there is very little outcropping rock. With ascent in altitude and increase in gradient, the depth of soil gradually decreases, till on the steep upper slopes there is to be seen only immense masses of bare outcropping rock and scattered boulders. On southern and western aspects the exposure to sun and wind is more severe than on northern and eastern slopes. This

causes a more rapid dissipation of the organic soil, which results in the belt of deep soil being lower on the former than on the latter aspects. These facts have an important bearing on the distribution of the forest.

The Forest.—Complexity and variation in forest conditions are the natural outcome of variety in slope and aspect and great latitude in elevation. As in topography, so also in forest conditions the Presidential Range offers the greatest differences. This complexity has been augmented by fire and lumbering, which often greatly change the original character of the forest. In general, however, the nature of the forest varies with the altitude. Four forest belts may thus be distinguished:

1. Under 1,800 feet elevation, where lower slopes and valleys occur, typical hardwood land is found. Sugar maple, yellow birch, beech and spruce are the prevailing species.

2. From 1,800 to 3,500 feet elevation the forest is characterized by the prevalence of spruce in mixture with balsam and yellow and paper birch. This is the regular spruce slope type.

3. From 3,500 to 4,200 feet elevation the growth is spruce and balsam, with some paper birch. It is mostly unmerchutable, being under forty feet in height.

4. At 4,200 feet scrub growth begins, and extends up to the limit of tree growth, which varies from 4,500 to 5,200 feet in altitude according to exposure and gradient. Above this, the bare rocks extend to the summits.

The elevations given for these belts are purely averages and not in the least fixed. The character of the growth also changes somewhat with the aspect and gradient, as well as with the elevation. Thus, on a steep, rocky southwest slope, the scrub line would be lower than on a northeastern exposure of moderate incline.

The lower slopes of the Presidential Range have been almost entirely cut over, but there is still much virgin timber left above the valleys, notably in the Low and



FIG. 1.—THE SLOPES OF THE CRAWFORD NOTCH ARE NOW COVERED WITH HARDWOOD FOREST.



FIG. 2.—HARDWOOD FOREST OF THE CRAWFORD NOTCH.

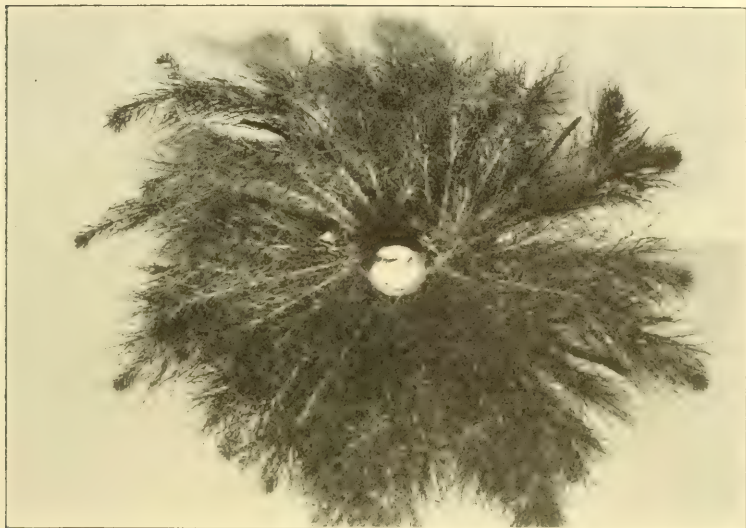


FIG. 1.—THE PITCH PINE OFTEN SPROUTS FROM THE ROOT COLLAR AFTER FIRE.



FIG. 2.—PITCH PINE LAND REPEATEDLY BURNED, WITH UNDERGROWTH OF SCRUB OAK.

Burbank Grant, where lumbering operations have only just commenced. The effect of lumbering on the lower slopes is to increase the proportion of hardwoods in the second growth.

FORESTS OF THE CARTER RANGE.

Physiography.—The Carter Range runs parallel to the Presidential Range, and is separated from it by the Glen Ellis and Peabody Rivers. This range forms a striking counterpart of the Presidential Range. The highest peak is Carter Dome, with an elevation of 4,860 feet, and there are eight peaks in all with elevations of over 4,000 feet. It includes the Carter, Moriah, and Wildcat Mountains, and extends from the Androscoggin River in Shelburne to the village of Jackson in the south. It is 20 miles long and two to seven miles wide.

The range is entirely surrounded by the five rivers by which it is drained, the Peabody and Glen Ellis Rivers on the west, the Wild and the East Branch of the Saco on the east and south, and the Androscoggin on the north. The Peabody and Wild Rivers flow northeast into the Androscoggin, and the Glen Ellis flows into the Saco.

Soil.—The general character of the soil and underlying rock is the same as on the Presidential Range. It is, however, important to note that the elevation of the belt of great rock exposure is lower on the Carter than on the Presidential Range. The soil plays out at a lower altitude on the former than on the latter because of the difference in elevation between the two. Consequently the belt of scrub forest growth extends to lower elevations on the Carter Range.

The Forest.—The same belts of forest prevail here as on the Presidential Range. In general, the forest below 1,500 feet elevation is the hardwood type, with yellow birch, sugar maple, beech, and spruce as the characteristic species. In the sandy flats along the rivers, especially on the Androscoggin, there is considerable second-growth pine land, with spruce and balsam in mixture. Above the hard-

wood land the spruce slope extends up to about 3,200 feet elevation. Above this the trees rapidly decrease in size and run out into a scrubby growth of spruce and balsam which extends up to about 4,400 feet elevation.

The forests of the Carter Range have been heavily lumbered. At first the lumbering was only for saw logs on the lower, more accessible slopes. Later the higher slopes were taken and cut for both saw and pulp logs, and forests, which had been culled before for saw logs only, were cut again for pulp. At present, the higher the slope the cleaner the cutting, both because the growth is more purely coniferous and also because the exposure becomes so severe that trees which are left will be wind-thrown. The cutting on this range now extends up as far as there is merchantable growth, to 3,500 feet elevation on the average.

The slopes draining into the Glen Ellis River, from the village of Jackson to Wildeat Mountain, have been stripped of all coniferous growth. The present stand is now an inferior growth of hardwoods. The whole south spur of Wildeat Mountain is covered, however, with a virgin spruce forest. The slopes here are very steep, and the difficulty in lumbering has so far kept the lumberman away.

The southeastern slopes of the range, drained by the Wild River, have been pretty well cut over by the Hastings Lumber Company. A logging road was run the entire length of the valley, and the lower slopes were cut over first for saw logs only, and now contain an irregular forest of hardwoods, with considerable spruce suitable for pulpwood. The more recent lumbering, as that in the Moriah Brook Valley, has been severe, taking both saw and pulp logs. A scattering hardwood growth is all that remains, aside from a few small patches of virgin spruce on the upper and more inaccessible slopes.

The upper part of the Wild River Valley was severely burned in the spring of 1903, and but little growth now remains.

The north and west slopes of the range contain consid-

erable areas of uncut timber on the upper portions. The lower slopes have been entirely culled of softwoods and are now being lumbered to some extent for the hardwoods.

FORESTS OF THE SACO RIVER BASIN.

The Saco River watershed covers the southeastern portion of the White Mountain region. The river has its source in a small pond at the head of the Crawford Notch, on the west slope of the Presidential Range and flows in a general southeasterly direction for about thirty miles, when it crosses the Maine state line. The area of the watershed covered by the examination is 444,435 acres.

The character of the country varies greatly in this river basin, and two distinct types are apparent. The upper portion of the river and its tributaries lie in a mountainous country cut up into deep valleys, with many high mountains crowded close together. Parts of the Presidential and Carter Ranges are in this watershed, and also the high mountains in Waterville and Albany. In the southern and southeastern parts, however, the country becomes comparatively flat, and the plain level is about 480 feet. The country is here characterized by low, rounded chains of hills and a few isolated mountains, none, however, reaching great height. The soil is very sandy, and there are numerous small lakes and ponds.

Agricultural Land.—The farm land lies chiefly in the eastern and southern portions. The soil is sandy and poor, and, except right along the streams, the farming is not good. The principal crops are clover and timothy hay, oats, rye, wheat, corn, potatoes, peas and beans. There are a few orchards, usually overgrown and neglected. The farming industry of this entire section has steadily declined and is now reduced simply to meeting the needs of the inhabitants. The area under cultivation is much smaller now than fifty years ago. Many farms have been abandoned and many have passed into other hands and been allowed to run to waste. A large area once cleared

and tilled has thus reverted to forest, and much more is in process of reversion. This area, containing as yet no merchantable timber, is classed as waste land on the map, although a large part of it is better adapted to forest growth than to anything else.

The hardwoods of this region show great energy in seeding up old pastures and abandoned fields, and the reversion to forest conditions is very rapid. The most energetic and persistent tree in this respect is gray birch, many old fields coming up to a pure stand of this species. On low sandy situations in the neighborhood of seed trees, pine seedlings come in thickly, either as a pure stand or in mixture with the hardwoods.

The Forest.—The forest varies with the locality. In the northern part of the watershed, on the steep mountain slopes, spruce forests predominate. On the lower, sandy plains, pine is the chief species.

The northwestern part, or upper portion of the Saco basin, is in the high mountains of the Presidential and Carter Ranges. The greater part of this section has been heavily lumbered and much of it severely burnt in the past, and in consequence the present growth consists almost entirely of hardwoods.

The eastern part of the Sandwich Range lies in this watershed, the divide running over Sandwich Dome and Tripyramid. There is a great deal of virgin forest on the mountain slopes in this section, and in Albany and Waterville the stand of spruce is the heaviest in New Hampshire. The best stands are on the slopes of Tripyramid and Passaconaway, at an elevation of 2,500 to 2,800 feet, and on the east slope of Sandwich Dome, between 2,200 and 3,000 feet elevation. The latter stand consists of 90 per cent. spruce, with about eight per cent. yellow birch and a very little balsam in mixture. The mature spruce range from eight to 24 inches in diameter and 80 to 90 feet in height. The slope is steep, with numerous rock outcroppings and a thin, loamy soil, but without moss.



FIG. 1.—CLEAN CUT SLOPE, LINCOLN TOWNSHIP. THIS LAND CUT OVER 18,000 BOARD FEET PER ACRE.



FIG. 2.—CLEAN CUTTING ON THE STEEP SLOPES, LINCOLN.

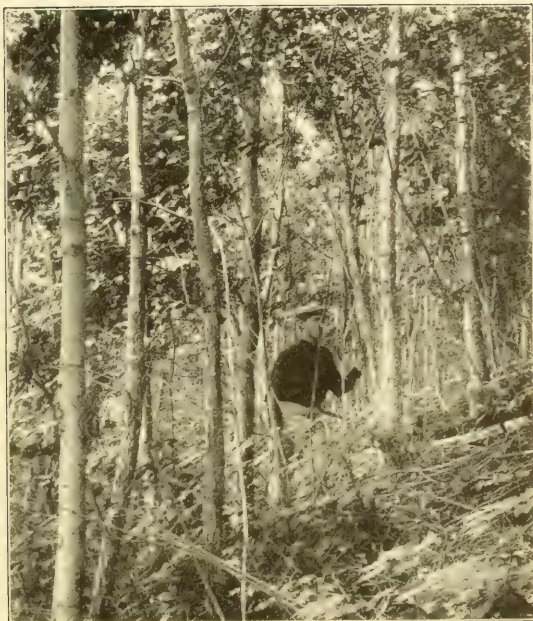


FIG. 1.—GROWTH OF ASPEN, WHITE BIRCH, YELLOW BIRCH, AND MOUNTAIN MAPLE ON AN OLD BURN.



FIG. 2.—NORTH SLOPE OF PRESIDENTIAL RANGE AT RANDOLPH.

There is consequently a fair exposure of mineral soil, and the reproduction of spruce and balsam is good.

This stand merges into an upper spruce slope type on the upper side, and at an elevation of 3,500 feet consists of about 75 per cent. spruce, with 15 per cent. balsam and much yellow birch. The forest here contains many dead trees and bare poles, but has a fair density. The mature spruce are rather scrubby, and seldom over 50 feet in height. There is a thick layer of moss, and the reproduction is dense, consisting almost entirely of balsam.

Above this type the forest assumes a decidedly scrubby character, with a very dense growth of balsam, up to an elevation of 3,800 to 4,000 feet. Beyond this the peaks of the Sandwich Range rise as bare granite ledges, with no vegetation save where a few stunted balsam and spruce, hardly more than bushes, find a footing in the crevices of the rocks.

Hardwood Lands.—The hardwood areas of the valley section represent either old waste lands, or cut-over lands where the stand has attained merchantable size, or land whose original growth was hardwoods. The latter is usually on gentle slopes or low rolling hills where the soil is of good depth.

The composition of the hardwood forests varies greatly. Often it is an almost pure stand of sugar maple, beech or birch, or these species in mixture with spruce, pine or hemlock. Much of the hardwood land has been freely logged for cordwood and birch bolts, and the greater part of the large timber has been removed. Large areas of second-growth hardwoods are found around Jackson and through the entire watershed.

Pine Lands.—Throughout the lower part of the Saco basin there are considerable stretches of low, level, sandy country where the original growth was pure stands of pine. The old growth was cut from 40 to 120 years ago. The conditions, however, are remarkably well adapted to pine reproduction, and the second growth consists of practically

pure white pine. Much of this second-growth also has been cut over. In many places the white pine is mixed with red pine in varying proportions, and occasionally, over small areas, the red pine occurs pure. The only virgin growth of white pine now remaining is at Intervale. This is the last remnant of a pure growth which once covered this entire section.

Pitch Pine Land.—The country around Silver Lake in the township of Madison, and extending north to Albany and Center Conway, originally contained a heavy growth of pitch pine. This area consists of fairly level, rolling stretches, becoming more hilly toward the north and with a deep soil of very coarse sand. It was heavily cut over 30 to 40 years ago, and much of it has been severely burned since. The growth now consists of pitch pine poles and saplings, three to eight inches in diameter and 25 to 30 feet in height, either widely scattered or in small isolated groups. The ground is covered with a very dense growth of scrub oak (*Quercus pumila*) four to five feet in height, which chokes out nearly all other growth. Beneath the oak there is, over most of the area, a dense matting of sweet fern. Through much of this area there are evidences of repeated fires. Where these have occurred there is no reproduction and nearly all the scrub oaks have two or three feet of dead tops. The lower half of the pines are burned and scarred, and though they are still living their growth and vitality are seriously impaired. Where fires have been kept out the conditions are somewhat better. There is a good reproduction of pitch pine and a thrifty seedling growth of gray birch, sugar maple, popple and red maple, but the stand is as yet of little value.

FORESTS OF THE PEMIGEWASSET RIVER BASIN.

This covers the southwest portion of the White Mountain region, and includes an area of 343,512 acres. The Pemigewasset River rises in the Franconia Notch. Flowing due south, it receives the drainage of Lake Winnipiseogee

and forms the Merrimack River. The chief tributaries in the region examined are the East Branch and the Mad River. The former drains the township of Lincoln, and the latter Waterville.

The entire watershed is a decidedly mountainous country; the valleys are narrow and there is very little level land. It is bounded on all sides by high mountains and includes in its area Mts. Lincoln and Liberty, the former over 5,000 feet in elevation. Mts. Tecumseh and Osceola in Waterville are within this basin and also the low range of hills called the Squam Mountains, just north of Squam Lake. On the west, Mt. Moosilauke, reaching an altitude of 4,810 feet, is the highest peak.

Agricultural Land.—The agricultural land in this watershed lies chiefly around the southern and eastern borders of the region examined, along the line of the Boston & Maine Railroad. There is also considerable farming land in the Pemigewasset and Mad River valleys.

The Forest.—The entire watershed was originally covered with a spruce forest. Of this original growth but little now remains. The largest areas that have not yet been logged are in the townships of Lincoln and Waterville. Along the East Branch of the Pemigewasset, in the former township, between Mts. Lincoln and Liberty on the west and Mts. Bond and Carrigain on the east, is a heavy forest of spruce. The composition of this forest consists of spruce with a strong admixture of hardwoods and balsam, the percentage of the latter increasing with the altitude. A few old pines still remain, and in the swampy places there are patches of white cedar.

Generally the best spruce land is below an altitude of 2,800 feet, while white pine is of commercial importance only below 1,500 feet. The best stands of spruce are usually found on the north and northeast slopes of the mountains, above 1,000 feet elevation. Below this the white pine and hardwoods are able to occupy the ground.

Lumbering has been carried on only in the more accessible

portions of the township of Waterville, especially along the lower course of Mad River. Fully 60 per cent. of the township still contains a fair merchantable stand of spruce, and a great deal of virgin timber still remains on Mts. Tripyramid, Kancamagus and Osceola.

There are large areas over the entire watershed that have been lightly cut over, or cut years ago, and now have a fair merchantable growth of spruce pulpwood. These stands are usually well mixed with hardwoods, maples, beech, yellow birch, and popple, and considerable balsam.

Nearly all the pure hardwood forests are second-growth, and are due to a change of species after lumbering and fires. Along the valley of the Hancock Branch, in Lincoln, the forest was completely logged. The upper and steeper slopes were clean cut, the unmerchantable stuff being used as skids and shear poles, down which the merchantable timber was rolled to the nearest logging road. These slopes have grown up to a thicket of hardwoods and balsam, with very little spruce. Popple, bird cherry, and yellow birch are the chief species. This grades off into more mature stands on the older cuttings, which often contain also considerable young spruce and balsam. Hemlock is common on the lower slopes.

The largest area of hardwood land is around Mt. Carr in the townships of Warren, Ellsworth, Rumney and Wentworth. The spruce was taken out, leaving the mature hardwoods, and now good second-growth hardwoods have come in. In addition to the usual sugar and red maples, beech, and yellow birch, there is also a large amount of red oak in this section, and considerable white ash.

Many fires have occurred in this watershed, in the Zealand Valley and also in the vicinity of North Woodstock; and throughout on the old cuttings there are traces of fires in the past. On these areas the softwoods are usually lacking, and there is a prevalence of popple and birch, and, on the more recent burns, dense thickets of bird cherry.

FORESTS OF THE AMMONOOSUC RIVER BASIN.

The Ammonoosuc River rises in the Lake of the Clouds on the upper slopes of the Presidential Range and flows into the Connecticut at Woodsville. The portion of this river basin examined includes the western slope of the Presidential Range, from Mt. Clinton to Mt. Adams, the southern slopes of the Dartmouth Range and Cherry Mountain, and the north and west slopes of the divide between the Connecticut and the Pemigewasset watersheds. Its area is 142,539 acres. The western portion of the drainage basin, consisting chiefly of farming land along the Connecticut River, was excluded.

The upper portions of this basin are very high. From Mt. Moosilauke on the south to Mt. Adams on the northeast there is a continuous series of peaks and mountains from 3,000 to 6,000 feet in altitude. The upper slopes are steep and barren, often totally devoid of growth, while merchantable timber ceases at about 3,500 feet elevation.

Agricultural Land.—Around Franconia and Bethlehem farm land predominates, and the forest becomes of only secondary importance. There are also large areas of agricultural land in Easton.

The Forest.—There is practically no virgin forest left in this watershed, save a very few isolated patches on the upper slopes. The country has been entirely cut over and subject to severe fires. Where these have occurred, as on Cherry Mountain and in the Zealand Valley, the growth consists chiefly of bird cherry, popple, and yellow and paper birch. Balsam and spruce show a tendency to come in as the other species die out, but where sugar maple and beech gain a footing a hardwood forest is the result.

On the low land spruce and balsam form a large part of the second-growth, but on the lower slopes hardwoods predominate.

Extensive areas of culled forest exist in Franconia, and on the slopes of Mt. Garfield and the Twin Mountains con-

siderable spruce is left. The western slope of Mt. Moosilauke also has a considerable growth of spruce. In general, however, the greater part of this watershed is coming up to second-growth hardwoods.

FORESTS OF THE ISRAEL AND UPPER AMMONOOSUC RIVER BASINS.

The Israel and Upper Ammonoosuc Rivers are both tributaries of the Connecticut, the former flowing into it at Lancaster and the latter near Groveton. The area of the two watersheds examined is 220,499 acres. The Israel drains the northwest slopes of Mts. Adams and Jefferson in the Presidential Range, the north slopes of Cherry Mountain and the Dartmouth Range, and the south slopes of the Jefferson Mountains. The Upper Ammonoosuc rises in Randolph, on the northwest slope of the Crescent Mountains, and flows northwest.

These two basins, therefore, include the entire Pliny and Pilot Ranges and extend as far north as the Dixville Mountains, and east to the divide of the Androscoggin watershed. The greater parts of the townships of Lancaster and Northumberland were excluded from the examination, since they consist chiefly of farm land.

The country is mountainous, but for the most part the slopes are moderate. The highest peaks are Mts. Adams and Jefferson, rising nearly 1,000 feet above timber line. The tallest, Mt. Jefferson, reaches an altitude of 5,725 feet.

Agricultural Land.—There is a considerable area of cleared and improved land along the Israel River and on the lower slopes of the Jefferson Mountains. Further north there is a strip of cleared land along the line of the Grand Trunk Railroad.

The Forest.—These two watersheds have been heavily cut over at periods during the past fifty years. The only virgin forest now remaining is an area in Erving's Location and a strip on the slopes of Mts. Adams, Jefferson and Bowman, in the Low and Burbank Grant. Erving's Location is a small, well-wooded tract in the southeastern part of the

Dixville Mountains. Owing to its being near no stream suitable for driving, it has escaped lumbering. It is not, however, a very good spruce country, and hardwoods predominate, except on the upper slopes. On the northwest slopes of Mts. Adams and Jefferson, in the Presidential Range, between the altitudes of 2,500 and 3,500 feet, is a virgin spruce slope. With these two exceptions the entire region has been cut over and the predominating growth is now hardwoods.

Severe fires have occurred on the slopes of Cherry Mountain and the Dartmouth Range, and on these old burns the growth is very poor. A large fire occurred in the spring of 1903 in the townships of Kilkenny and Berlin, which burned over about 18,000 acres.

The Pliny Mountains in Jefferson consist of three peaks, the tallest of which is 4,029 feet in height. The lower slopes are covered with hardwood coppice, the result of lumbering and fire, while the upper slopes have considerable spruce and balsam. There is a large area of waste land on the summits.

Over a great deal of the lumbered land in these basins there is very little growth but hardwoods, as on the Randolph Hills, while in the country between Crescent and Round Mountains and through the northern parts of the basins there is considerable spruce and balsam left. Here the chief species are balsam, spruce, yellow and paper birch, hemlock and sugar maple. This represents an original forest of mixed hardwoods and spruce, in which the spruce probably formed 50 per cent. of the entire growth. The reproduction of spruce and balsam is generally good, forming 30 to 50 per cent. of the entire reproduction.

The characteristic growth, which springs up after logging on trails and clearings, is mountain and red maple, with some black and bird cherry, striped maple, and gray and yellow birch. Spruce and balsam usually gain a slight foothold later, and come in as a subsequent growth on such spots, the balsam predominating.

On the gentle slopes there were originally large quantities of white pine, which is still abundant in the second growth.

FORESTS OF THE ANDROSCOGGIN RIVER BASIN.

The Androscoggin River is the natural outlet of the Rangeley Lake system. This is a chain of six lakes in Maine, the lowest of which, Umbagog Lake, lies two thirds in New Hampshire. The Androscoggin, flowing out of this lake, receives the Magalloway River drainage, and then flows in a southerly direction until, striking the White Mountains, it turns east into Maine. Thus, though the river starts in New Hampshire, it receives its chief water supply from Maine.

The area of this watershed in New Hampshire is 344,312 acres, of which 6,280 acres are lakes and ponds. It includes the northern slopes of the Presidential and Carter-Moriah ranges in the White Mountains, and extends north in a strip approximately ten miles wide to the Dixville Mountains. Its chief tributaries in the White Mountain section are the Peabody and Moose Rivers, which rise on the slopes of the Presidential Range.

Agricultural Land.—There is a considerable area of farm land in this watershed, lying chiefly in the valley of the Androscoggin River. The greater part is in Gorham and Shelburne. There are also many abandoned fields, which are coming up now to a second growth of softwoods.

The Forest.—The largest areas of virgin forest in this basin lie on the north slope of the Presidential Range, in the Low and Burbank Grant and the Thompson and Merve Purchase. Aside from this the entire watershed has been cut over more or less heavily.

Extensive fires have occurred. The Wild River valley, on the east slope of the Carter Range, was badly burned over in the spring of 1903, and Pine Mountain in the township of Gorham has been repeatedly burned.

Originally a heavy stand of white pine covered the whole of the Androscoggin Valley, but of this nothing now re-



FIG. 1.—REPRODUCTION OF BALSAM, YELLOW BIRCH, AND CEDAR ON
LAND LOGGED FIFTEEN YEARS AGO. PITTSBURG.



FIG. 2.—SPRUCE BOG. LOGGED FIFTEEN YEARS AGO AND COMING UP
TO DENSE STAND OF BALSAM.



FIG. 1.—A HEAVY STAND OF SPRUCE WITH THICK BALSAM REPRODUCTION.



FIG. 2.—DRIVE HUNG UP TWELVE YEARS AGO ON THE INLET TO SECOND LAKE.

mains but a few scattered trees. Considerable areas of second-growth pine occur, however, at the lower elevations, and it often comes in with great energy on old fields and abandoned pastures.

The country throughout the townships of Berlin and Success has been most heavily lumbered and badly burnt. It contains at present very little growth of any value. There was formerly considerable larch on the low, swampy land, but an invasion of the larch saw-fly in 1885 killed off all the old growth not already cut. On some of these areas, however, there is now a thick larch reproduction mixed with balsam.

The softwood reproduction in the northern section is generally good, spruce and balsam maintaining themselves fairly well on the cut-over land, and usually forming 10 to 20 per cent. of the young growth.

The townships of Errol and Cambridge were logged 35 to 40 years ago for white pine, and 25 to 30 years ago for spruce saw logs, only the best spruce being taken. Comparatively little cutting has been done there since. There is now a good growth of softwoods, balsam predominating. The popple is very abundant throughout, with considerable yellow and paper birch, beech and sugar and red maples in mixture.

There are small areas of swampy land near the Androscoggin River. The principal growth in these places is an open stand of scrubby black spruce, running up to nine inches in diameter and 40 to 50 feet in height. There is also some white cedar and balsam on these spruce bogs.

Above Errol and along the Magalloway River and Clear Stream, the country is cut up into small tracts owned principally by farmers and small lumbermen, and has been very generally logged over within the last twelve years.

FORESTS OF THE MAGALLOWAY RIVER BASIN.

The country drained by the Magalloway River lies in the northeastern corner of the state. The river itself lies just

across the state line in Maine and, flowing slightly southwest, crosses into New Hampshire just above Umbagog Lake, where, receiving the drainage of the entire Rangeley Lake system, it forms the Androscoggin River.

The area drained by the Magalloway River in New Hampshire covers 135,960 acres. It includes the east slopes of Mts. Magalloway and Pisgah and the eastern and southern slopes of the Crystal Mountains. Its chief tributaries are the Dead Diamond and the Swift Diamond Rivers.

The country is rough, with many low ridges and low mountains, and is well watered, with innumerable brooks and small streams. The general base level varies from 1,200 to 1,800 feet, and there are no mountains over 3,700 feet in height. As a result, there are no peaks above timber line, and with the exception of Mts. Magalloway and Carmel, the mountains are all covered with merchantable growth.

Agricultural Land.—There is practically no cleared land in this drainage basin, and there are no towns or settlements save the lumber camps.

The Forest.—This entire region is a spruce country and is, at present, the best timbered watershed in New Hampshire. The southern half has been practically all cut over at one time or another, but as a rule the cutting has been light, and there is much merchantable stuff left, while the entire northern part of the basin is still virgin forest.

The country lying along the Swift Diamond River and its tributaries, and extending up to an elevation of 2,500 feet on the bordering mountains, contained originally two distinct types of forest. The first, found along the main stream and the lower courses of its tributaries, and rarely running to an elevation of over 1,800 feet on the mountain sam, with a little white spruce in mixture. Above this type came the second, a hardwood slope extending up to the divides. The chief growth was sugar maple and yellow birch, with considerable spruce and balsam in mixture.

This country has been heavily logged by the Berlin Mills Company within the past 20 years. All of the valley softwoods have been cut, and the slopes below 2,000 feet have also been logged. The virgin forest remaining lies on the southern slopes of the Crystal Mountains. It consists of a scattered growth of tall, well-formed spruce, in mixture with a predominating growth of hardwoods.

On the cut-over land considerable small spruce has been left, mostly under eight inches in diameter. The softwood reproduction, particularly balsam, is good in the valleys but poor on the slopes, where, with the exception of a thick balsam reproduction on a few steep, mossy ledges, the young growth is principally hardwoods.

The country along the Little Dead Diamond Stream, in the Atkinson and Gilmanton Academy Grant, has also been logged over by the Berlin Mills Company. The cutting has been very conservative. Considerable spruce remains, and there is excellent softwood reproduction on the lower slopes. North of this the drainage basin has not been lumbered, and the forest consists of virgin spruce land.

Along the valleys the forest consists of spruce flats. This type follows the streams closely, rarely running up the moderate slopes of their basins to an elevation of more than 100 or 200 feet above the bed of the stream and occupying in general the lower and more poorly drained areas of the region. The forest of this type is a dense, almost pure stand of mature softwoods. Black and white spruce, with some red spruce and a little balsam and white cedar, are the principal species. The trees are mostly small in diameter, slender and tall in form. The ground is covered with a heavy matting of moss, bearing a moderately heavy reproduction of balsam and black spruce, with a scattering of the other species. On the drier valley bottoms red spruce forms the dominant growth. The trees here are larger and better formed, running from eight to 24 inches in diameter, while the stands on the swampy ground will not average more than 12 to 13 inches in diam-

eter. The spruce flats represent the densest softwood forest of the region, but not the best individual development of the trees.

Just above this spruce flat type, and extending up the moderate slopes often to an elevation of 2,200 to 2,300 feet, are the spruce slopes. These slopes have a fairly deep soil and good drainage. The individual development of the trees is better than on the flats, the spruce running from eight to 28 inches in diameter, and occasionally reaching a height of 95 feet. In marked distinction from the flats, the chief conifer here is the red spruce, there being little balsam and almost no white spruce, while the hardwoods form from 25 to 40 per cent. of the stand. Yellow birch and sugar maple, with some paper birch and beech, are the chief hardwood species. In consequence of the decreased density of the forest as a whole, the ground cover is correspondingly heavier and is more shrubby and herbaceous than in the preceding type.

Above these lower spruce slopes come the hardwood slopes. A heavy growth of fine, mature hardwoods forms in this region the typical forest of the moderate middle slopes, running up to the summits of the low, rolling hills. Rarely, on the higher mountains, it rises above an altitude of 2,400 feet. These slopes have a moderate gradient, good drainage, and a fairly rich, loamy soil of good depth. When these conditions are present, the chief growth is usually hardwoods, though spruce slopes occasionally occupy areas of the same character, owing probably to especially favorable conditions for the distribution of seed.

The hardwoods on these slopes are yellow birch, sugar maple, paper birch, and beech, forming together 60 to 75 per cent. of the entire stand. Spruce and balsam form the remainder of the growth. This mixture with hardwoods seems to favor the development of straight, full-boled trees of good height, making excellent timber. The reproduction is almost entirely hardwoods.

Throughout this type the spruce and balsam occur widely



FIG. 1.—FIRST CONNECTICUT LAKE. EFFECT OF CONSTANT FLOODING FOR STORAGE PURPOSE.



FIG. 2.—TIMBER KILLED BY FLOODING.



FIG. 1.—REPRODUCTION OF WHITE AND NORWAY PINES UNDER
SEED TREES. CHATHAM.



FIG. 2.—SECOND GROWTH OF WHITE PINE ON ABANDONED LAND.

scattered or in small groups of a few trees. Frequently, however, on the steeper and higher slopes, rather small areas of dense softwood growth are found, with few or no hardwoods in mixture. These areas occur chiefly on the steep, thin-soiled, rocky ledges or precipitous slopes which are found frequently in this region, often the result of glacial erosion. Almost pure spruce and balsam occupy these places, where the gradient is too steep and the soil too thin and poor for hardwoods. The trees are short and scrubby, seldom over 50 feet in height. Often in the more exposed situations the chief species will be balsam, with but little spruce and some yellow birch. Such growth occurs on the summits of Crystal and Magalloway Mountains. These forests have suffered a great deal from windfall and death of the balsam. In general, however, there is very little scrub growth in this watershed.

FORESTS OF THE UPPER CONNECTICUT RIVER BASIN.

The drainage basin here called the Upper Connecticut consists of the entire Connecticut drainage area in New Hampshire as far south as Groveton Junction, where the drainage basin of the Upper Ammonoosuc River joins it. The area of this basin examined was 320,720 acres, of which 5,120 acres are water, consisting chiefly of the Connecticut Lakes. The township of Colebrook and a large part of Stewartstown and Columbia, consisting, as they do, for the greater part of agricultural land, were not examined.

The country in general consists of low, rolling hills. The chief mountains are Mts. Pisgah and Magalloway on the east and the Dixville Mountains and other low ranges in the south. The country immediately around the lakes is flat, and there are a few bogs and swamps, although none of large extent.

Agricultural Land.—South of the First Lake there is a great deal of cleared and improved land along the valley. The farming land in the townships of Colebrook and Stewartstown is considered as good as any in the state.

The Forest.—With the exception of a small area in the extreme north and a narrow strip in the northeast, the whole of this river basin has been logged. The virgin forest consists of a strip about six miles wide on the north of Pittsburg township and a narrow strip on the western slopes of Mts. Carmel, Magalloway and Pisgah. The forest here is essentially the same as the virgin forest in the Magalloway basin adjoining. There is no scrubby growth save on the summit of Mt. Magalloway. The principal types are spruce slope and hardwood land, this being a region of slopes and ridges with few flat valley bottoms. The spruce flat type is confined to a narrow strip along the East Inlet, the Connecticut River and the East Fork. Its most typical form along these streams is a swampy or bog land growth, consisting of dense stands of black spruce, with considerable red spruce and balsam in mixture. The rest of this drainage basin consists of cut-over or culled land and second growth.

The country was cut over first for pine and then for spruce, although but little pulpwood was taken in the northern part. The growth now, through Pittsburg, consists chiefly of mature hardwoods, yellow birch, sugar maple, and beech, with considerable small spruce and balsam. Through the southern part of the watershed the stand is almost pure hardwoods, with only a little spruce, balsam, and hemlock remaining.

The second growth throughout the valley is excellent, and is almost entirely softwood. Spruce, pine and balsam come in very rapidly on abandoned fields and pastures. On the moister soils the typical growth is larch, cedar and balsam, with some spruce and red maple scattered through. The second growth shows an excellent promise for the future of this region.

SECOND GROWTH AND REPRODUCTION.

The problem of second growth in New Hampshire is easily next to the fire problem in importance. In fact, the

chief service of fire laws will be to keep fire from the second growth after lumbering. All intelligent recommendations in regard to the silvicultural treatment of the forest must be based on a thorough knowledge of second growth and reproduction. Special studies of the characteristics of the different forest trees must be supplemented and co-ordinated by a general study of the competition which takes place between them for a place in the forest, the conditions which determine its make-up under different circumstances, and the effect of man's interference. When it is known what will happen, for example, after lumbering in a particular locality, the operation can be planned with reference to the effect on the future stand of timber. Recommendations of high economic importance in the cutting of the forest can be made only when the conditions governing second growth are known.

The value of second growth is well illustrated by the stumpage price of the so-called sapling pine, which averages \$3.25 per thousand at an age of 40 to 50 years. This often cuts 20,000 board feet to the acre, and sometimes as high as 40,000 feet of boxwood lumber. The stumpage price of second-growth spruce and balsam for pulp is \$2.00 to \$2.50 per cord. The value of popple and paper birch, which are rapid-growing trees coming up on cleared land, is nearly as high as that of spruce and balsam, and they become merchantable in 25 to 30 years.

Occurrence.—The general nature of the second growth varies with the forest region. Pine is the most important second-growth species. In the White Mountain region and the northern part of the state, spruce, balsam, paper birch and popple are all-important second-growth trees. The nature of the growth differs more particularly according as it is found: (1) in the forest; (2) on lumbered land; (3) in pastures and abandoned fields; (4) on burns. The subject will be considered under these heads.

Growth in the Forest.—In a virgin forest reproduction and succeeding growth are extremely slow. Suppressed

seedlings of tolerant species continue to exist under dense shade, but their growth is scarcely perceptible. When openings are made in the forest by the decay and death of the veteran trees, these suppressed seedlings begin to grow more rapidly under the stimulus of increased light. Reproduction of the more intolerant or light-demanding species also takes place in the natural openings formed and these make up for lack of tolerance in rapidity of growth. Vacant places in the forest are thus soon filled up with a flourishing succeeding growth of tolerant and intolerant species, struggling against each other for a place in the new stand.

The tolerant species, whose seedlings continue to grow under the shade of the mature trees, are: spruce, balsam, hemlock, sugar maple and beech. As these are the only species which can endure dense shade for any length of time, they constitute the prevailing reproduction in the uncultured forest. Birches, cherry, popple, and mountain ash, intolerant and rapid growing, seed profusely in the openings.

The character of the reproduction varies also with the forest type. Counts on three sixteenth-acre plots on spruce slope, the same number on hardwood land, and one square rod in a windfall on spruce slope, gave the following average results:

TABLE XIII.—REPRODUCTION IN VIRGIN FOREST.

Species.	Average number of seedlings per one-sixteenth acre.		
	Hardwood land.	Spruce slope.	Spruce slope windfall.
Beech.....	2,902	.....	.....
Maples.....	1,671	49	.....
Paper birch.....	.....	.....	1,285
Spruce.....	25	353	108
Balsam.....	.....	103	141
Yellow birch.....	46	14	.....
Mountain ash.....	.....	.....	3
Hemlock.....	.....	1	.....
Total.....	4,644	520	1,537

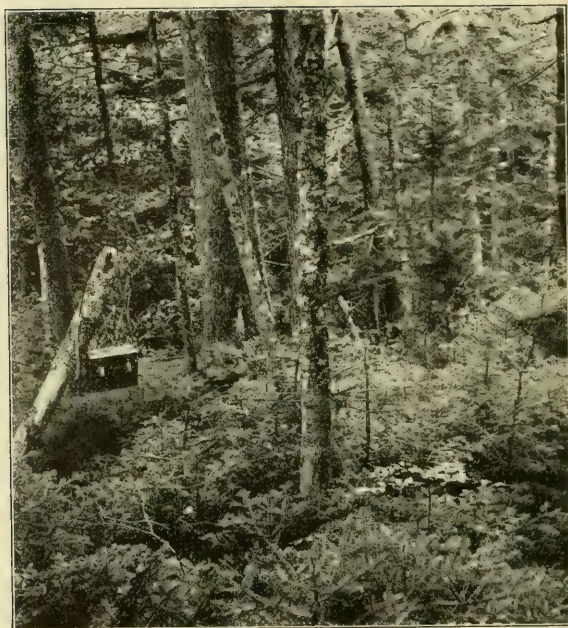


FIG. 1.—BALSAM AND SPRUCE REPRODUCTION ON A SPRUCE SLOPE.
ELEVATION, 3,000 FEET.



FIG. 2.—BEECH AND HARD MAPLE SEEDLINGS IN HARDWOOD FOREST.
ELEVATION, 1,200 FEET.



FIG. 1.—OLD FIELD GROWING UP TO JUNIPER AND WHITE PINE.



FIG. 2.—GROWTH OF WHITE PINE ON AN OLD FIELD.

On hardwood lands beech and sugar maple seedlings constitute almost the entire young growth. The thick ground cover of undecomposed hardwood litter on this type is unfavorable to coniferous germination, but forms a suitable seedbed for sugar maple and beech. For this reason such land when cut over always comes up to hardwoods, which are already on the ground waiting for an access of light to start active growth.

On the spruce slope type there is good reproduction of conifers. The seedbed—coniferous duff covered with moisture-holding moss—is better suited to their germination than that on hardwood land. On the upper portions of this type windfall is often quite common.

The character of the stand on these windfalls is changed, for a time at least. A one sixteenth-acre plot taken on a 50-year-old windfall showed the following stand of trees:

TABLE XIV.—REPRODUCTION ON ONE-SIXTEENTH ACRE OF 50-YEAR-OLD WINDFALL ON SPRUCE SLOPE.

Species.	Number of trees.	Average diameter breasthigh.
		<i>Inches.</i>
Paper birch.....	12	6.8
Spruce.....	11	5.2
Balsam.....	3	4.2
Yellow birch.....	1	6.0

Upper spruce slopes have almost entirely softwood reproduction, particularly balsam. The softwoods are able to hold their own on this type after windfall or lumbering. Where landslides occur on the steep, forest-clad slopes and everything is carried off down to the bare underlying rock, natural reforestation is extremely slow and depends on the gradual accumulation of soil.

On coniferous flats reproduction and second growth of those conifers which are the prevailing species are excellent. The mossy ground cover which is generally present is best suited to balsam.

Growth on Lumbered Land.—In the White Mountain region most of the lumbering has been done on the lower slopes. The effect is to increase the proportion of hardwoods, for a time at least, in the succeeding stand. The proportion of conifers increases with the elevation and gradient, in the growth after cutting as well as in the original forest.

The results from sample plots, one rod square, on lumbered areas, are given in the following table:

TABLE XV.—REPRODUCTION ON CUT-OVER LAND.

Species.	Average number of seedlings per one-sixteenth acre.		
	Hardwood land cut clean 2 years ago.	Spruce slope cut clean 6 years ago.	Spruce flat cut clean 7 years ago.
Yellow birch.....	38	170	35
Bird cherry.....	65	18	10
Witch hobble.....	30	.....	.....
Sugar maple.....	25	.....	.....
Red maple.....	.....	.....	5
Ash.....	.....	.....	3
Aspen.....	.....	.....	3
Total.....	158	188	56

On coniferous flats there is abundant hardwood reproduction immediately following lumbering, but there is usually sufficient young coniferous growth already on the ground to make up for this, so that the stand will in the end be mainly softwoods. On the spruce slope and spruce flat given in Table XV there were left after the logging 250 and 135 spruce and 20 and 53 balsam, respectively. That these softwood seedlings eventually crowd out the hardwoods is shown in the following table:

TABLE XVI.—STAND ON A FLAT CUT CLEAN 40 YEARS AGO.

Diameter breasthigh.	Number of trees on one-sixteenth acre.				
	Spruce.	Balsam.	Paper birch.	Yellow birch.	Maples.
<i>Inches.</i>					
1	5	3	.....	3	9
2	.....	2	2	2	2
3	1	4	1	1	3
4	.....	.....	.....	1	.....
5	1	3	1	.....	3
6	.....	.....	1	.....	1
7	.....	1	.....	.....	1
8	.....	2	.....	.....	.....
9	2	1	.....	.....	.....
10	1	.....	.....	.....	.....
12	.....	3	.....	.....	.....
13	.....	1	.....	.....	.....
19	.....	1	.....	.....	.....
Total	10	21	5	7	19

These tables indicate that the conifers are able to hold their own after lumbering on the spruce slopes and flats, but not on the hardwood lands.

Growth on Pastures and Abandoned Fields.—A large area in New Hampshire is covered with forest growth on lands originally cleared for pasture and agricultural purposes, but subsequently abandoned as unprofitable. In the white pine region along the Saco River there are numerous stands of excellent pasture pine which yield, when cut, as high as 40,000 board feet of box-board lumber to the acre. In the White Mountain region and in the extreme northern part of the state the abandoned land is often covered with a thrifty growth of spruce and balsam. A certain amount of grazing is beneficial to the growth of the conifers, for it tends to keep down the hardwood seedlings and sprouts. The cattle eat the broadleaf foliage, and this is one reason why the second growth on pastures is mainly coniferous. There is frequently a considerable admixture of the birches, popple, and aspen, which form good nurse trees for the softwoods.

The following sample plots serve as an indication of the stand of spruce and balsam at different ages in pastures,

and will give an idea of what kind of a yield may be expected, in the course of time, from old-field growth:

TABLE XVII.—REPRODUCTION ON OLD FIELDS AND PASTURES.

Plot No.	Area.	Age.	Species.	Number of trees.	Average height.	Average diameter.
1	<i>Acres.</i> 1-16	<i>Years.</i> 5-15	Spruce..... Balsam..... Total.....	88 25 113	<i>Feet.</i> 6 8	<i>Inches.</i> Not on survey.
2	1-16	15-20	Spruce..... Balsam..... White pine.... Total.....	65 114 13 192	20 for dominant trees.	1.5 2.0 2.8
3	1-16	20-25	Spruce..... Balsam..... Others..... Total.....	13 60 3 76	30 for dominant trees.	4.2 3.6 1.4
4	1-16	25-30	Spruce..... Balsam..... White pine... Hemlock..... Maple..... Total.....	35 57 31 33 30 186	30-40 for dom- inant trees, pine and balsam.	2.0 3.1 2.8 1.9 2.4
5	1-16	30-35	Spruce..... Balsam..... Hardwoods... Total.....	44 9 10 63	35 for dominant trees.	5.5 4.0 2.3
6	1-16	35-40	Spruce..... Balsam..... Hardwoods... Total.....	68 19 17 104	35-40 for dom- inant trees.	3.9 5.1 1.8
7	1-4	40-45	Spruce..... Balsam..... White pine... Total.....	99 8 5 112	50 for dominant trees.	8.3 6.2 7.6

Where grazing is very slight the pasture sometimes grows up first to the hardwoods with light-winged seed, as is the case after fires. The conifers gradually creep in under these light-foliaged, intolerant species; they are only slightly suppressed by them, and in time will crowd them out altogether. The following sixteenth-acre plot illustrates how under such conditions softwoods come up under the hardwood growth.

TABLE XVIII.—REPRODUCTION ON LIGHTLY GRAZED LAND.

Species.	Number of trees.	Average height.	Average diameter breasthigh.
		<i>Feet.</i>	<i>Inches.</i>
Spruce.....	38	15	2.0
Balsam.....	12	20	2.3
Hemlock.....	31	15	1.6
Popple.....	4	45	6.4
Yellow birch.....	3	20	2.4
Paper birch.....	46	35	4.1
Red maple.....	18	25	2.7
White pine..	1	10	1.0
Total.....	153		

The height growth of seedling spruce and balsam in pastures and old fields is very different from that in the forest. The following table shows the average growth in height in the former situations of four of the principal old-field species:

TABLE XIX.—HEIGHT GROWTH ON OLD FIELDS.

Species.	Age—Years.							
	5	10	15	20	25	30	35	40
	Height—Feet.							
Spruce.....	.8	2.4	6.0	10.0	16.0	28.0	35.0	.....
Balsam.....	1.2	3.7	10.6	18.3	.....	.....	.....	.....
Popple.....	9.0	16.0	23.0	.....	.....	.....	.....	.....
White pine.....	1.2	8.0	15.0	22.4	30.0	38.0	45.6	53.0

In the white pine country, as along the Saco River south of the Crawford Notch, white pine is the most important and valuable old-field growth. It comes up almost pure, in mixture with gray birch and popple, or with pitch or red pine.

The following sample plots show the growth of white pine stands at different ages under favorable conditions:

TABLE XX.—WHITE PINE ON OLD FIELDS.

Plot No.	Area.	Age.	Species.	Number of trees.	Average height.	Average diameter breasthigh.
	<i>Acres.</i>	<i>Years.</i>			<i>Feet.</i>	<i>Inches.</i>
1	1-2	3-10	White pine ...	804	5	.....
			Others	108	.....	.....
2	1-2	10-15	White pine ...	1,640	7	.....
			Others	280	.....	.....
3	1-2	15-20	White pine ...	1,020	20	3.0
			Others	240	.....	2.5
4	1-2	25-30	White pine ...	525	25	4.1
			Others	55	.....	3.0
5	1-2	30-35	White pine ...	355	40	6.2
			Others	4	.....	.....
6	1-2	35-40	White pine ...	187	55	7.0
			Others	34	.....	2.5
7	1-2	40-45	White pine ...	170	65	8.7
			Others	25	.....	6.0
8	1-2	45-50	White pine ...	175	70	9.0
			Others	60	.....	8.0
9	1-2	50-55	White pine ...	180	75	11.0
			Others .....	.....	.....	.....
10	1-2	60-65	White pine ...	137	80	12.6
			Others	5	.....	.....
11	1-2	65-70	White pine ...	300	85	12.5
			Others	5	.....	.....

Growth on Burns.—The effects of fire on growth is discussed more in detail under another heading. In general the effect is to kill all young coniferous growth which has been left in lumbering. The burn is immediately seeded up by intolerant, rapid-growing hardwoods with light-winged seeds, capable of being carried long distances by the wind, such as the birches, popple, and aspen. Frequently it comes up to a thick growth of bird cherry from seeds already in the ground, collected there for many years from deposits of birds.

When the burns are seeded up to a good growth of paper birch and popple, the expectation value of the stand is all that could be wished, as these species become merchantable in 25 to 30 years and pay good stumpage. A thick growth of cherry is absolutely worthless and, what is more, keeps

out all the valuable species for 10 or 15 years. A count of 2,116 bird cherry seedlings was made on one square rod of a 1903 burn. This is equal to 338,560 to the acre.

When coniferous seed trees are adjacent to the burn, softwood seedlings begin to appear within five years at least. These are suppressed for a time by the more rapid-growing hardwoods, but if the land was originally of a coniferous type, the softwoods will finally become dominant. On types approaching hardwood land the conifers will probably never return.

One square rod taken on an area burned 11 years ago, followed by another fire two years ago, had 22 popple and 122 cherry two-year-old sprouts on it, respectively four and three feet tall.

Sixteenth-acre plots, one on each type, gave the following results:

TABLE XXI.—REPRODUCTION ON BURNED-OVER LAND.

[1-16-acre plots.]

Species.	Slope. Burned 12 years ago.		Flat. Burned 30 years ago.	
	Number of trees.	Average height.	Number of trees.	Average diameter breasthigh.
		<i>Feet.</i>		<i>Inches.</i>
Yellow birch.....	187	15	2	1.0
Sugar maple.....	123	3	.....	.....
Mountain maple.....	92	15	.....	.....
Wild red cherry.....	74	20	.....	.....
Spruce.....	.....	.....	22	2.5
Paper birch.....	.....	.....	20	3.1
Aspen.....	19	20	3	3.9
Balsam.....	1	1	18	4.2
Red maple.....	2	3	14	3.8
Striped maple.....	13	5	3	1.0
Mountain ash.....	5	15	.....	.....
Shadbush.....	.....	.....	5	1.0
Beech.....	1	1	.....	.....
Willow.....	1	15	.....	.....
Total.....	518	.....	87	.....

TREES OF NORTHERN NEW HAMPSHIRE.

RED SPRUCE.

The red spruce is the characteristic tree of northern New Hampshire. It is found on all types and in a variety of mixtures. It occurs most frequently on a sandy loam soil, with fair moisture content. It cannot tolerate pure sand as the white pine does, but it will grow on soil of scarcely any depth, and in every variety of situation from the banks of rivers to the mountain tops. On the best loamy soils it has been known to reach a diameter of four feet breast-high, and a height of 100 feet; the average mature tree, however, is about 18 inches in diameter and 80 feet in height.

In form spruce varies with age and situation. Trees in the open have long, conical boles, with lateral branches extending almost to the ground. In the forest the boles are more cylindrical, and a third or more of their length is clear. During the period of greatest growth spruce develops a long, narrow conical crown, which in age tends to become broad and flat. The root system is very flat and shallow, made up of many small, branching, lateral roots. It is adapted to very shallow soils, but is not at all wind-firm.

Spruce produces some seed every year, but seeds very abundantly only about once in eight years. The seed does not germinate nearly so readily as that of balsam, and is more exacting in regard to the condition of the seed bed. Its requisites in this respect are: (1) a suitable degree of moisture and (2) sufficient soil, either organic or mineral. There is no special light requirement. The best spruce reproduction is found where the above conditions are best fulfilled, and this is on old decaying logs covered with moisture-gathering moss. There is very little spruce reproduction on hardwood land, where the soil is covered with a thick matting of hardwood litter. On spruce flats and slopes the reproduction is generally good, as the ground is

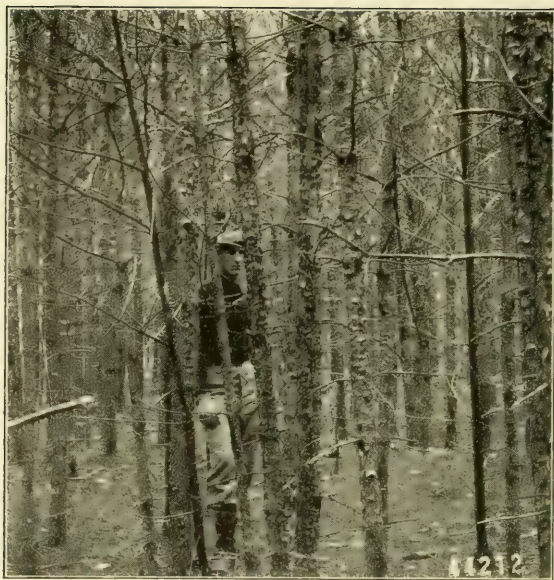


FIG. 1.—PURE STAND OF NORWAY PINE, BADLY IN NEED OF THINNING.

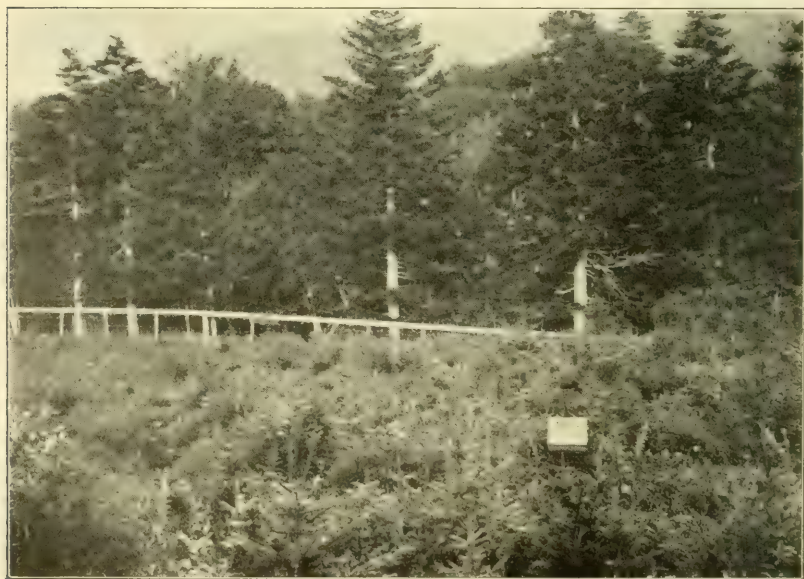


FIG. 2.—REPRODUCTION OF SPRUCE ON ABANDONED LAND, NEAR SEED TREES.



FIG. 1.—SECOND GROWTH SPRUCE AND BALSAM.



FIG. 2.—SECOND GROWTH WHITE AND NORWAY PINE. THIS STAND HAS BEEN THINNED AND THE TREES PRUNED TO A HEIGHT OF EIGHT FEET.

covered more or less with moss and there is considerable organic soil exposed. On the bare, moist mineral soil near streams there is often excellent reproduction. The seed is light and winged, and is easily carried considerable distances from the trees by the wind.

Spruce is one of the most tolerant of the coniferous species; that is, it can continue to exist with little sunlight, although it requires abundant light for rapid development. Germinating in the dense shade of the forest, it often continues to grow as a suppressed seedling for fifty years or more without reaching a height of over five feet. As soon as light is admitted, however, its rate of growth rapidly increases. It is this great tolerance and tenacity of the spruce in youth which makes up for its slow growth and causes it to be so generally distributed.

Spruce does not reproduce well on lumbered areas, because the more rapid-growing hardwoods get in ahead of it and seed up the ground. On spruce land, however, there is usually sufficient young spruce already on the ground to take the place of that cut. This growth may be suppressed for a time by the hardwoods, but it will in the end form a large part of the stand.

BALSAM.

Balsam occurs in mixture with spruce throughout northern New Hampshire and is found chiefly on the spruce flats, in swamps, and on the upper spruce slopes, often occurring nearly pure. It is not found to any extent on the hardwood land or lower slopes.

Very shallow-rooted, and needing only moss to germinate on, it can grow almost on the bare rock, and is the last form of tree growth to disappear on the summits of the high mountains, for it is found as a prostrate shrub at high altitudes. Balsam, at such elevations, rarely matures its seed, reproduction being dependent on seed blown up from below and on the layering of the trees themselves. Branches so layered are often found growing as independent trees, the

connecting branch having decayed. The rooting always proceeds from dormant buds. Prostrate balsam occurs at an altitude of 5,500 feet on the Presidential Range, where it reproduces almost entirely by layering. At an elevation of 4,900 feet cones are borne sparingly, but even here reproduction by layering exists. The scrub form extends down to about 4,500 feet elevation, and the upper limit of merchantable size is at 4,000 feet.

Individual fir trees seed as a rule every third year. This is, however, varied in some cases by seeding in alternate years, and even in successive years. The more vigorous the tree, the more frequent the seeding. The pollen matures on the last year's shoot and the cones on that of the year before; thus, in 1902, a good seed year, the pollen occurred on 1901 wood and the cones on that of 1900. The shoot made on the branches bearing pollen, the year the pollen matures, is usually markedly dwarfed.

The balsam prefers a mossy ground cover for a seed bed. Seedlings are usually very plentiful on old moss-covered logs and on the upper slopes. They are able to endure rather heavy shade and will live for years in a suppressed condition, ready to start into active growth on the removal of the old forest. Reproduction is best on the spruce flats and the upper slopes.

Balsam is not a long-lived tree; few individuals are found over 150 years old. It is easily thrown by the wind, and, growing as it does on very shallow soil at high elevations, the constant swaying of the tree in the wind may sever the connection of the rootlets, breaking and tearing them and thus causing the tree gradually to dry out and die for no apparent reason. Often large areas of such dead and dying trees are found on the upper slopes.

In second growth balsam takes a prominent part, especially on flats and on the moister ground. It is also very common on old burns, clearings and wind-falls at high elevations, and with yellow birch often forms the chief reproduction.

While balsam occurs over the entire region, it reaches better development and forms larger individual trees in the upper Connecticut and Magalloway watersheds than farther south.

WHITE PINE.

White pine was originally abundant in New Hampshire and was found in nearly all situations below 1,500 feet elevation. Practically all the old growth has been cut, and only a few scattered trees remain. The second growth however, is good, particularly in the Saco watershed and the southern townships. The tree prefers a rather sandy and fairly moist soil and has under favorable conditions an extremely rapid growth in height and diameter. Reproduction at present is confined almost entirely to old fields, which yield in 30 to 50 years almost incredibly large amounts of timber. In this length of time it is not rare for an acre of second-growth pine to produce 40,000 to 50,000 board feet.

The tree is intolerant of shade and, chiefly for this reason, it thrives best in even-aged, pure stands, such as come up on abandoned land when there are seed trees in the vicinity. White pine is fairly free from injuries, although up to its fourteenth year it is susceptible to attacks from the weevil, which deprives the tree of its leading shoot. This injury, when prevalent, has serious results, producing distorted trees which are of little value.

RED PINE.

The red, or Norway, pine is most abundant in the Saco drainage basin, where it originally occurred mixed with white pine, or often in small pure stands. It is not found in the mountains and only extends as far north as the lower Androscoggin. It prefers a sandy soil, such as that in Conway and Chatham, where it is most abundant. In both height and diameter growth it is very similar to the white pine, although having a slight advantage in early

youth. It is not, however, quite as tolerant of shade as the white pine, and prefers a rather open seedbed. In abandoned fields and pastures it often comes in very densely. In habit it is gregarious and is usually found in groups of a few trees or in pure stands over small areas. Restricted as it is to low localities with a sandy soil, it has not a wide distribution in the state, and is practically confined to the low lands around the Saco. A few scattered trees are also found in the townships of Thornton and Warren, and along the Mad River.

PITCH PINE.

Pitch pine occurs chiefly in the Saco watershed, on level, sandy soils. It is most plentiful in the township of Madison, around Silver Lake, and in the neighborhood of Ossipee Lake, Conway is its northern limit. It forms pure, open stands, often with an undergrowth of scrub oak (*Quercus pumila*) and some gray birch. It reproduces along roadsides and in openings in the woods, but requires a great deal of light.

It resists fire remarkably well, often sprouting to some extent when burned. The greater part of the pitch pine land has been repeatedly burned over. Pitch pine never reaches a large size, although individuals are occasionally found 14 inches in diameter. It is usually short and stunted.

JACK PINE.

This species (*Pinus divaricata*) occurs on the rocky, thin-soiled slopes and summits of the small mountains in the southern townships. It is short and scrubby and of absolutely no commercial value.

HEMLOCK.

Hemlock was formerly very abundant in the central part of the state, but has been almost entirely taken out for the

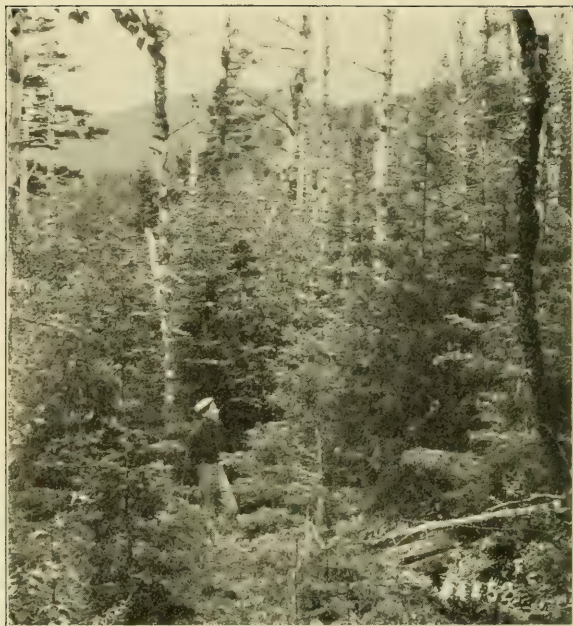


FIG. 1.—BALSAM ON THE UPPER SLOPES OF MT. WEBSTER. THE LARGER TREES ARE MOSTLY DEAD.



FIG. 2.—BALSAM IS EASILY THROWN BY THE WIND ON THE FLATS.



FIG. 1.—YOUNG GROWTH OF WHITE BIRCH AND POPLAR.



FIG. 2.—BARK OF RED SPRUCE.

bark. It occurs on the lower slopes of the Presidential Range below an altitude of 2,400 feet, and reaches its northern limit in the mountains of central Coös county.

Hemlock attains its best development on the lowlands along the streams and on the lower slopes, where it grows in mixture with hardwoods and white pine. The average diameter of mature trees is 16 to 20 inches, although many are found over 40 inches in diameter. Its growth is slow, and, although it is able to withstand very dense shade, the reproduction is very poor. The best reproduction is found along streams and in low, moist situations.

WHITE SPRUCE.

White spruce (*Picea canadensis*) is found only in the northermost part of the state, in the Connecticut Lake district. It here reaches its southern limit and replaces the red spruce to some extent in the forest. In height and diameter growth it is very similar to the red spruce, which it closely resembles in its characteristics.

BLACK SPRUCE.

Where spruce occurs in swamps it is usually not the red but the black spruce (*Picea mariana*), which is better adapted to wet places. It is distinguished by its shorter and more scrubby development, darker bark and a slightly deeper green cast of foliage. The cones also are smaller and more persistent.

LARCH.

Larch, or tamarack, is scatteringly distributed over the state, rarely occurring at elevations exceeding 1,300 feet. It prefers low, moist situations, where frequently the reproduction is pure and dense. The comparatively few swamps in the state explain in part the slight occurrence of the tree. It is one of the most intolerant species in the north woods and, in the White Mountain region at least,

is short-lived. It rarely reaches a diameter of eight inches.

Larch is extremely sensitive to fire—a fact of which there are striking illustrations in the valley of the Israel River in the township of Jefferson. Its chief enemy is the larch sawfly, which in the past has destroyed large areas of larch, but at present is not very much in evidence.

WHITE CEDAR.

White cedar, one of the less abundant species and one which rarely occurs in the southern part of the state, is the typical tree of the cold swamps in the north, where it frequently grows in dense patches. Ordinarily the size of the tree is small, 10 inches through and 50 feet high being unusual. Its reproduction is prolific wherever there is a suitable seedbed. This must be thoroughly moist and fairly deep. The seed is distributed to some extent by the agency of water. It is found on the shores of lakes and streams and is common on Third Connecticut Lake and also on the East Branch of the Pemigewasset River.

SUGAR MAPLE.

Sugar maple occurs over the entire state and, with yellow birch, is the commonest of the hardwoods. It reaches its best development on the deep, fresh soil of the hardwood slopes and is seldom found at elevations of over 2,600 feet. It never grows in swamps or on wet flats. It forms a long, clear bole with a small crown, and reaches a maximum height of 90 feet and a diameter of 30 inches, although the average for mature trees is much smaller. Growing in a dense forest in mixture with spruce, yellow birch and beech, it makes a heavy shade. In such places its reproduction is excellent; a thick matting of sugar maple seedlings covers the ground. It reproduces best on a seedbed of leaf litter where there is little underbrush. The seedlings are able to endure heavy shade.

Sugar maple is also very abundant along roadsides and on cut-over land. It is one of the first trees to come in after lumbering wherever the soil is sufficiently good to support it, and by its dense shade and faster growth during youth keeps out the softwoods.

YELLOW BIRCH.

Yellow birch has the widest distribution of any of the hardwoods in Northern New Hampshire. It occurs on every situation from the low, wet flats to the upper limit of tree growth on the mountains, but finds its best development on the lower slopes and drier flats, where it often reaches a height of 80 feet and a diameter of 36 inches. The trees of the largest diameter are, however, apt to be short, with widespreading or broken tops. The root system is shallow and well adapted to thin soil. Although the yellow birch will grow on rocky, shallow soil on the steep slopes, it is not found extensively above an altitude of 3,000 feet, although individual trees are common up to the limit of tree growth.

The yellow birch seeds abundantly and the seedlings are able to grow in rather heavy shade, although they are not so tolerant in this respect as the sugar maple. The best seedbed is moss, old logs, and decayed stumps. In second growth and windfalls the yellow birch comes in very densely, often to the exclusion of other species, and, owing to its adaptability to all soils, forms a large part of the forest in every situation.

BEECH.

Beech occurs throughout the state. With sugar maple and yellow birch it forms the chief hardwood of the country. It grows best on the lower slopes and along the valleys and streams, and is rarely found above an elevation of 2,400 feet. On cut-over land it is very abundant and after burns reproduces by sprouts. On the hardwood slopes,

where it reaches its best development, it reproduces profusely, preferring a seedbed of mineral soil or leaf litter not densely overgrown with underbrush. Beech is very tolerant, equaling the sugar maple in this respect, and the seedlings are able to live in heavy shade.

The beech does not form a very sound tree in this region and is apt to decay at an early period.

PAPER BIRCH.

Paper, or white, birch is widely distributed over the state and is particularly abundant in the White Mountain region, where it occurs at all elevations from valley to timber line. Its occurrence above and below an altitude of about 3,000 feet presents a marked contrast. Up to this elevation it grows scatteringly, apparently crowded out by other hardwoods and spruce, all of which generally attain a greater height than the paper birch. Above 3,000 feet the tree vies with the balsam for the first place in the forest, where its white, exfoliating bark renders it the more in evidence. Its abundance at high elevations is due rather to the fact that the soil is too poor to support other trees than to its particular preference for such situations. At an elevation of 5,700 feet on Mt. Washington it occurs as a prostrate shrub.

Paper birch attains its best development, however, in mixture with spruce at medium elevations, producing a clear merchantable stem topped by a comparatively short crown. Compared with its associating hardwoods it is short-lived, generally evidencing a lack of thrift before it reaches its hundred and twenty-fifth year. Its reproduction in the forest at the lower elevations is noticeably scattering, which is explained by its intolerance of shade. At the higher elevations, however, where the other hardwoods practically cease and where the height of the tree has materially decreased, paper birch reproduces prolifically. On lumbered areas, burns, and windfalls the reproduction is frequently dense; this, however, depends upon the proxim-

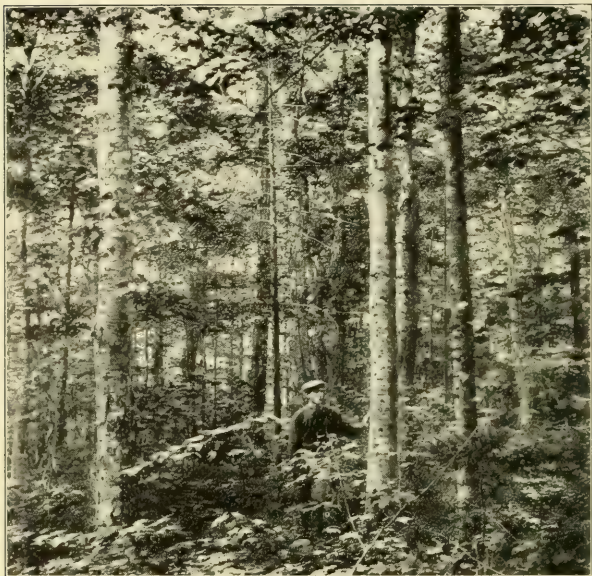


FIG. 1.—HARDWOOD FOREST CULLED OF SPRUCE.

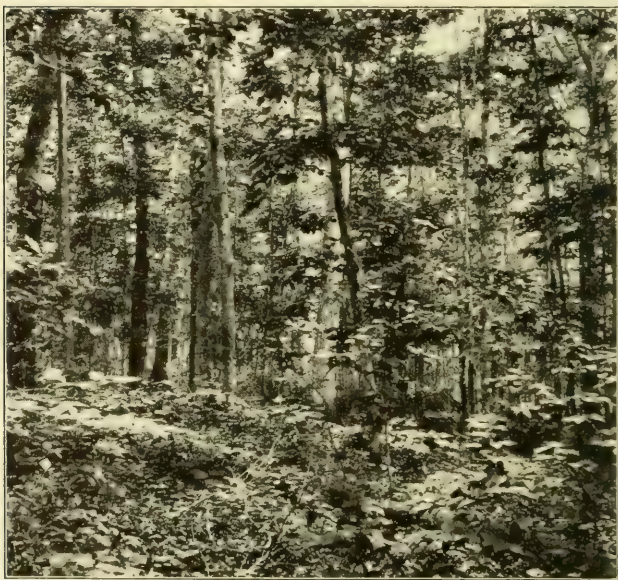
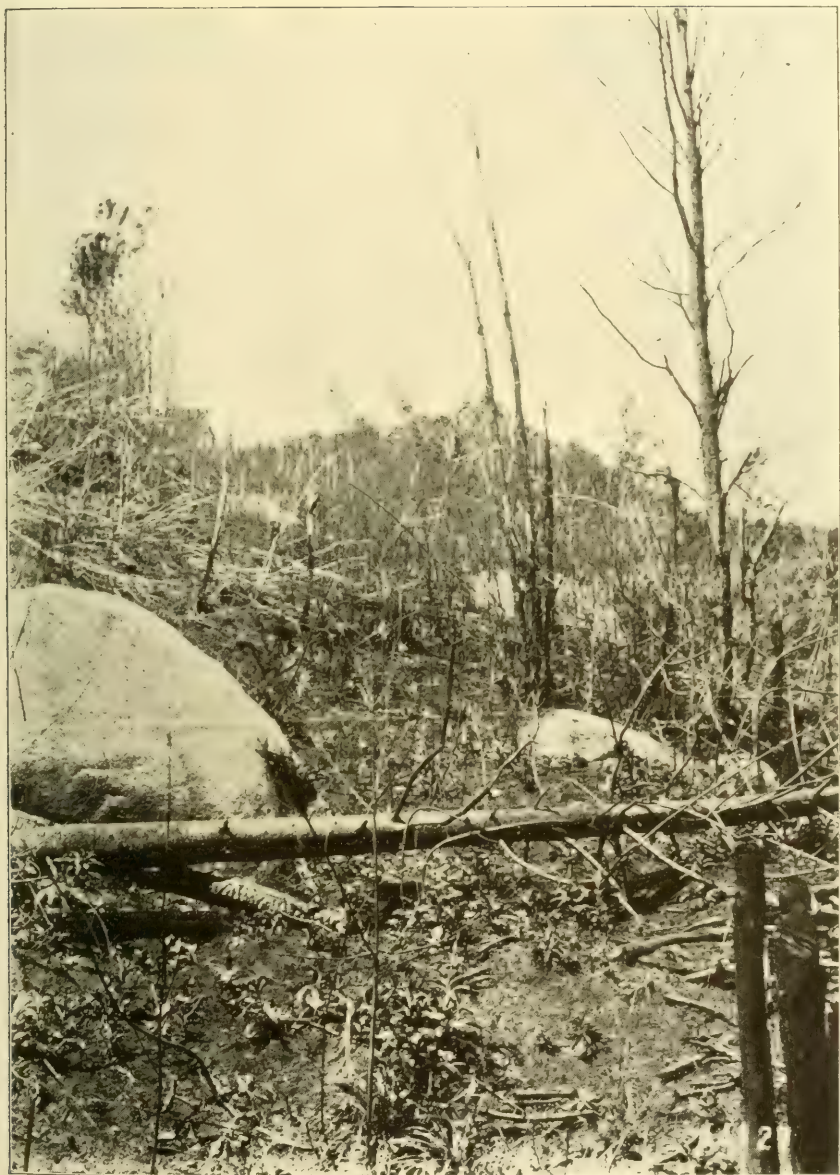


FIG. 2.—VIRGIN HARDWOOD LAND.



EFFECT OF FIRE ON CUT-OVER LAND.

ity of seed trees. It is not root-firm, and when a portion of the forest is removed it falls an easy prey to the wind.

RED MAPLE.

The red maple is abundant in New Hampshire. It prefers moist soils and is seldom found on the mountains above an elevation of 2,500 feet, although individual trees are occasionally seen at 2,700 feet. It is one of the commonest trees on cut-over land at low elevations, and is very conspicuous in second growth, owing to its ready tendency to coppice. The red maple reproduces easily. It is not so tolerant of shade as the sugar maple but makes rather faster height growth.

POPPLE AND ASPEN.

These two species, *Populus granidentata* and *Populus tremuloides*, have practically the same silvicultural characteristics and commercial value. They differ slightly in distribution, popple, or largetooth aspen, being confined mostly to the southern half of the state, while aspen has a general distribution over the entire state.

Popple is extremely rapid-growing but short-lived. It shoots up like a weed, growing on the average 18 feet in height in the first 11 years. It will not grow on the poorest qualities of soil and is generally found in the better localities. The aspens have a light-winged seed that can be easily carried for long distances by the wind and any land is apt to be seeded up to a thick stand of these species wherever there is sufficient light, as on burns, after lumbering, or on abandoned fields. The trees seldom get beyond 50 years in age, by which time they have reached a large size. Extreme intolerance of shade is usually, however, the cause of their early death. Commercially, popple is a valuable tree. Its use is chiefly for soda pulp and excelsior. After fire or lumbering the aspens are very desirable species to have come up, as they become merchantable in 20 years and yield a large stand to the acre.

BIRD CHERRY.

Bird, or wild red, cherry (*Prunus pennsylvanica*) is the common successor of fires and comes up with great energy, especially where the land has been burned over more than once. It is fast in growth, but never reaches large size, and is absolutely worthless. The densest stands are to be found on Cherry Mountain and in the Zealand Valley, in the townships of Carroll and Bethlehem, and on Pine Mountain in Gorham. All these tracts have been repeatedly burned over. It occurs over the entire state, coming up on old logging roads and on cut-over land, but to attain its best development requires fire.

The seed are almost wholly distributed by birds, which are very fond of the fruit. The seed may remain in the humus for long periods before germinating. When a fire runs over the area all seeds not killed are brought into direct contact with the capillary moisture of the mineral soil by the burning away of the organic matter on which the seed rested. The seed coat is very thick and so is able to withstand a very hot fire, while considerable moisture is required to start germination. The access of light that follows a fire or cutting is also necessary, for the cherry is very intolerant of shade.

After a fire, practically every uninjured cherry seed that is properly covered by soil germinates, and makes a very rapid growth the first year, having in the case of a severe burn, little or no competition. A height growth of three or four feet and even more is common. If the area is again burned over, each seedling sprouts with great energy. The result is a dense stand of bird cherry. It grows very rapidly at first but its height growth is limited and at the end of 30 years becomes very slow. Other species then quickly crowd it out. Few trees are found over 50 years old.

WHITE OAK.

White oak, though common in southern New Hampshire, occurs in the region examined only as scattered individuals over a small area. It extends as far north as Plymouth,

Squam Lake and the Ossipee Lakes, but is seldom found at an elevation of over 500 feet, and in the section of the state examined is a tree of merely botanical interest.

RED OAK.

Red oak also is a typical tree of the southern part of the state. It is the hardiest of the oaks and extends as far north as the Israel River on the east and the lower Androscoggin on the west, but is not found in the White Mountains proper. It is most abundant in the townships of Warren, Wentworth and Rumney in the Pemigewasset watershed, where it forms a large part of the hardwood forest. In the township of Eaton, on the slopes north of Robertson's Pond, it occurs as an almost pure stand, with some ironwood in mixture. It is common on Mt. Hayes, in Gorham, up to an elevation of 2,500 feet, but is not usually found at such elevations, rarely occurring in large numbers above 1,500 feet.

The red oak coppices readily and is fairly tolerant of shade.

WHITE ASH.

White ash, scatteringly distributed in the region considered by this report, exhibits a marked increase in occurrence and size from north to south. It generally seeks moist, alluvial soil along streams, but was found, though as a straggler, at an elevation of 2,300 feet on Mt. Hayes, in the township of Gorham. In the White Mountain region specimens of large size are uncommon. Though the tree sprouts freely at the stump, reproduction from seed is poor. Intolerance of shade is a characteristic of the white ash and becomes more pronounced with age.

BLACK ASH.

This species occurs in moist situations below 2,000 feet elevation. It is found in the valleys where the soil is fertile and deep, and along small streams. It is not of frequent occurrence.

ELM.

The white, or American, elm, although of wide distribution and common over the entire state, does not occur anywhere in great abundance. It is found on deep alluvial soils along the streams and in meadows, but is not found to any great extent in the forest. Owing to its requirement for deep, moist soil, it occurs only at low altitudes.

BLACK CHERRY.

Black cherry is not common in Northern New Hampshire, and no large trees are found. It reaches its best development on fresh, deep soil and on the lower slopes and valleys. It occurs chiefly as individuals along roadsides. It was found in greatest abundance at low elevations in the townships of Chatham and Eaton and along the Androskoggin. The reproduction is very poor and but few seedlings are found.

GRAY BIRCH.

Gray birch, often called "white birch," but to be distinguished from the paper, or white, birch, has about the same distribution as white pine. It occurs plentifully in the southern townships of the state, in fields and pastures. It is of little commercial value except for cordwood.

BLACK BIRCH.

Black birch occurs but seldom in the region examined. It is found chiefly on the small mountains in the southern townships, but rapidly disappears northwards. It prefers moist, cool situations.

BASSWOOD.

This species is often found in hardwood forests under 2,000 feet in elevation in the southern half of the state. It prefers moist, well-drained, fertile soils, and is not common in Northern New Hampshire.

BUTTERNUT.

Butternut is chiefly found in the southern part of New Hampshire and occurs only as scattered individuals in the northern townships, in fields and along roads. It is of little commercial value.

TABLE XXII.—AVERAGE HEIGHT OF THE IMPORTANT SPECIES.

Diameter breasthigh.	Height—Feet.					
	Spruce.	Balsam.	Sugar maple.	Beech.	Yellow birch.	Paper birch.
<i>Inches.</i>						
6	41	46	46	53	45	48
8	49	53	53	59	51	56
10	55	59	57	63	56	61
12	60	63	59	65	58	63
14	64	67	60	67	60	65
16	67	70	61	68	61	67
18	70	73	62	69	62	69
20	73	76	63	70	63	72
22	76	78	64	71	64	74
24	78	80	65	72	65	76

FOREST FIRES.

The general topography of New Hampshire is sufficiently hilly to preclude the possibility of a catastrophe by fire commensurate with that which occurred in the Miramichi Valley of New Brunswick in 1825, or in Wisconsin or Michigan in the early seventies. Forest fires, however, of greater or less extent and severity have been the common accompaniment of lumbering and the clearing of land since the earliest days. In recent decades the introduction of the steam locomotive as a common carrier and as an adjunct to the lumberman's logging outfit has greatly increased their number. The same is true of the increase in the number of persons who frequent the woods for pleasure. The extension from year to year of the total area which

has been burned and appreciation of the facts that the great bulk of this land has failed to develop a valuable forest growth, that indeed much of it remains an absolute waste, and that the forest resources of the state are being rapidly depleted, has forced on all thoughtful persons interested, financially or otherwise, the recognition of the fire question as the question of first importance to the forests of the state.

Damage and Extent.—For a number of years preceding 1903, New Hampshire has been comparatively free from destructive fires, although almost every year added a considerable, and some years a very large contribution to the total area burned over. These fires ran as a rule over lumbered land, but occasionally they destroyed considerable areas of virgin forest. One of the most destructive of them, within the White Mountain region, was that in the Zealand Valley in 1888. This valley had been lumbered for spruce saw-timber by J. E. Henry & Sons, the spruce being taken to a diameter of about 10 inches on the stump. The fire, starting, as is supposed, from a burning match dropped by a smoker, ran over some 12,000 acres, destroying the hardwoods and the remaining spruce, together with about two million board feet of saw-logs on the skidways. The loss in stumpage was estimated at the time at \$50,000 on the pulpwood standing. The hardwoods had at the time practically no sale value. One hundred thousand dollars would be a conservative estimate of the present stumpage value of this spruce had it not burned, without taking into account the value of the large growth increment which would have accumulated during the 15 years since the fire.

In 1903 84,255 acres were burned over. The amount of damage varied greatly in different localities, but a conservative estimate would place it at something over \$200,000. The spring of 1903 was particularly favorable for forest fires. The precipitation between April 17 and June 6 in the White Mountain region averaged about 0.3 of an inch, as compared with five inches normal rainfall for this time.

The winds averaged somewhat above the normal and the same was true of the percentage of sunshine, all combining to bring about a season of unprecedented danger. New Hampshire suffered greatly in destruction of her mountain soils. The loss of stumpage, however, considering the area burned over, was inconsiderable, while the loss to settlements was fortunately very slight. In the latter respect New Hampshire has been very fortunate, for although vast property interests have been threatened in her forest fires, comparatively little burning of buildings or improvements has taken place.

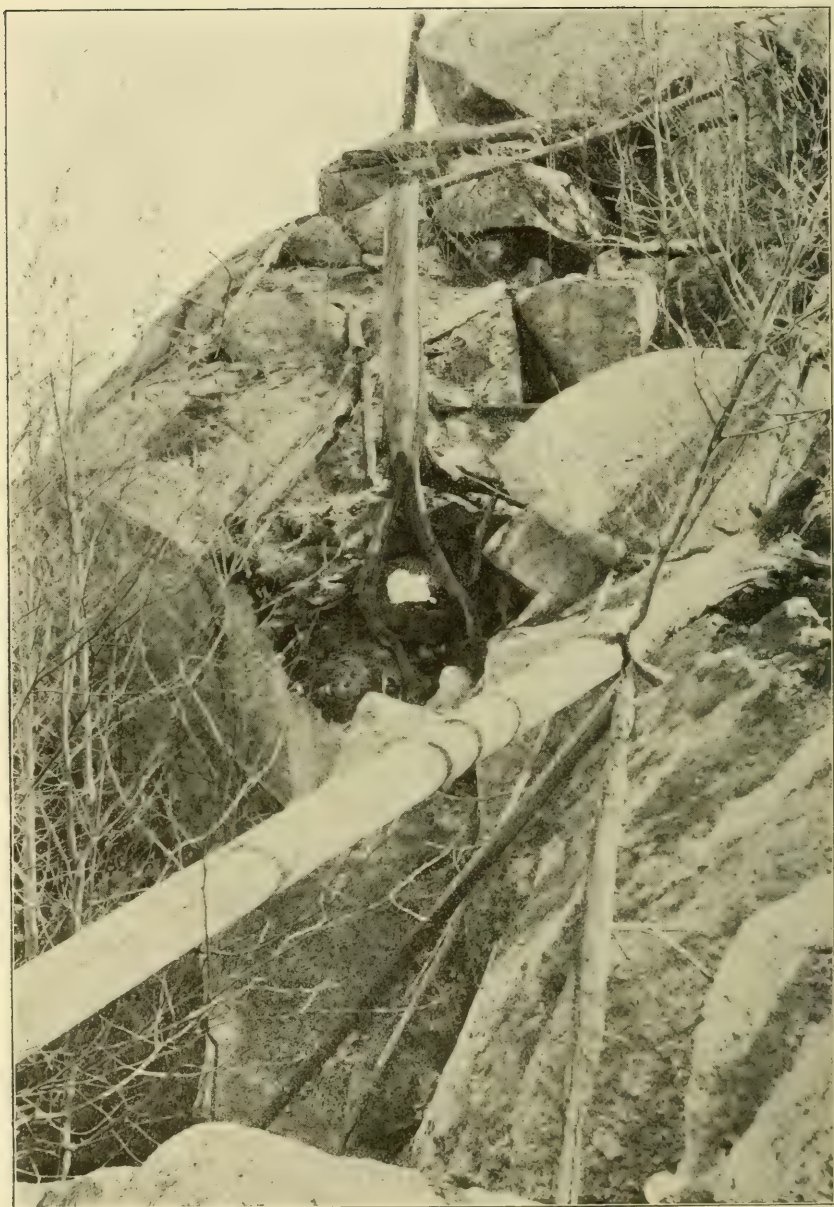
In injury to standing timber, the loss has been far greater. The amount of injury done in any particular case depends on the character of the stand and the intensity of the fire. The latter in turn depends on a variety of circumstances, chief among which are the velocity of the wind at the time, the gradient and exposure of the area burned, the character of the ground cover, the moisture conditions and the start the fire has gotten.

In this connection the effect of the elevation on the wind velocity is of importance. It is well known that normally the air movement increases very markedly with increase of elevation above the earth's surface. The result of this increased air movement depends very largely on the total height, gradient and form of the hill, and to a still larger extent on the height of the neighboring hills. The data taken at different points on Mt. Washington by the U. S. Weather Bureau indicates an increase of about nine or ten per cent. in the wind velocity per 100 feet increase in elevation. This may be regarded as approximately correct for unsheltered hillsides. But at the comparatively low elevations at which most fires originate the increase is in almost all cases very much greater. Fires from railroads, fishermen and campers originate, as a rule, in valleys, where at 100 feet elevation on the leeward side the wind velocity may be easily double or treble that obtaining where the fire started.

Exposure and gradient also play a considerable part in determining the severity of the fire. In general, south and west slopes and slopes which face the prevailing winds are more apt to be visited by severe fires than those less exposed to drying influences. Especially important is the exposure of a hillside in relation to the direction of the wind at the time of the fire. The more nearly a slope faces the direction of the wind, the more favorable the chances for the development of a severe fire, and the steeper the gradient, the more rapid and the more complete will be the conflagration.

Surface Fires.—In light surface fires the most important consideration is the character of the ground cover. In pine forest the inflammable character of the dead needles which cover the ground makes such surface fires very likely to occur, especially in April, with its light rainfall and high winds. On hardwood lands the débris is normally much less inflammable than under pines. In early spring, however, when the rainfall is light and the winds are high, the fact that the trees are without foliage makes the danger of ground fires here second only to that on pine lands, the absence of foliage permitting direct drying and heating by the sun's rays and giving the wind a much more effective sweep. These surface fires may spread quite regardless of the moisture condition of the soil, and are sometimes to be seen running over the ground in the immediate neighborhood of banks of yet unmelted snow, so effective are wind and sun, during the long days of the latter part of April and May, on the unshaded floor of the hardwood forest.

These surface fires are, as a rule, more injurious to the prospect of future crops than to the mature timber of the stand. They are, nevertheless, always more or less injurious to the mature timber. The various hardwoods as well as spruce and balsam are frequently injured by the death of the bark in spots at the base of the trunk or on a root. This, in the case of the hardwoods and balsam in-



TOTAL DESTRUCTION OF SOIL CAUSED BY FIRE FOLLOWING LUMBERING.
SUGAR LOAF MOUNTAIN.



FIG. 1.—YOUNG CONIFERS KILLED BY SEVERE GROUND FIRE.



FIG. 2.—GROWTH OF BIRD CHERRY ON THIS YEAR'S BURN.

variably, and with the spruce usually, results in defective timber, the injury providing a favorable opportunity for attack by the wood-destroying fungi. The growth of the stand is checked by the destruction of the mulch of leaves which is nature's protection against direct evaporation of moisture from the surface of the soil and against the development of moisture-robbing weeds on the forest floor. The stand suffers also by the deterioration in the fertility of the soil due to the destruction of the humus.

Should the soil itself be dry, the results are at once more evident and more serious. This is due to the fact that forest soils normally contain a sufficient amount of organic matter to burn more or less deeply in a dry season. This soil burning varies in severity according to the depth of the organic matter, the dryness, etc., but is very destructive to standing timber even when comparatively slight. Trees having a superficial root system are naturally the greatest sufferers.

Such fires may, when drought has not been excessive, or before the ground has become very dry, kill the timber in spots only, burning superficially or not at all over the remaining area. Such fires are often not regarded seriously because of the small proportion of the total area injured. They sometimes prove, however, almost as disastrous in the end as a more general burning, for the places where the trees are killed make very favorable points of attack for both wind and insects.

A severe ground fire will certainly kill all the standing timber, and may ruin the soil. It will not, however, destroy the timber which it kills. This timber may be saved if removed during the same season without injury to its quality or value, aside from any inconvenience arising from the necessity of its utilization at once. A crown fire, on the other hand, such as is liable to occur in coniferous stands under favorable conditions, almost invariably injures the market value of the timber, and may consume the trees altogether.

Virgin Forest.—On virgin hardwood land fires are not of frequent occurrence, and when they do occur they are usually of the light surface type. Virgin spruce lands in New Hampshire have not suffered greatly from fire. Occasionally fires from cut-over lands, driven by strong winds, have caught in the tops of virgin spruce and swept over considerable areas. Ground fires resulting from carelessness of campers and other causes have been known, after days of slow burning, to develop under favorable conditions into fierce conflagrations. Such a fire was that which destroyed the virgin spruce and balsam stand in King's Ravine, on the north slope of Mt. Adams.

Fires on Lumbered Lands.—Fires on cut-over lands of all kinds present much the same characteristics. Once a fire gets a start on such lands, with wind and weather at all favorable to its spread, it is usually quite impossible to combat it with any success. Where the cut has been heavy and the resulting débris correspondingly large, all the difficulties of fire fighting are proportionately increased. All kinds of waste material left in the woods supply food for the flames, but the leaving of large, unlopped softwood tops on the ground adds enormously to the fury of a brush fire, and greatly prolongs the length of time that a slash remains a menace to its own and surrounding areas. These large tops, propped up from the soil by their branches, are very slow to decay and become very dry. A large area in the Zealand Valley, which escaped the fire of 1888, was burned over in 1903, eleven years after the last lumbering. This valley had been lumbered for spruce sawlogs only, no trees under 10 inches on the stump being taken. This fire, which ran over about 10,000 acres, shows that the length of time that cut-over areas must be specially protected against fire is great, even when a very considerable proportion of the stand is left after lumbering.

Fires on cut-over lands usually kill all standing timber left on the area burned, as well as all the young growth. Until market conditions shall make it possible greatly to

reduce the amount of waste material which is at present left on the ground after the average lumber job, the only safety for such lands is in an efficient fire patrol during the dangerous season. Unfortunately, the owner of lands severely cut over usually has not, or thinks he has not, a sufficient financial interest at stake to provide for this. This circumstance, and the fact that the state has the greatest interest in the protection of the land for the production of crops which shall be harvested by a succeeding generation, point to the desirability of its providing such patrol, towards defraying the expense of which taxes on timberlands may well be made to contribute.

Fires and Future Crops.—The influence of fire on the production of future crops of timber has chiefly to do with the change brought about in the species present and the effect of burning on the soil capacity. Of all the influences affecting the distribution of forest trees in New Hampshire within the last century, none has produced anything like so profound an impression as fire. The magnitude of this change depends naturally on the character, especially the severity, of the burn. Even a slight surface fire is exceedingly destructive to young growth and to the seeds of trees which may be present in the soil covering. Naturally some species are more susceptible to injury by a very light fire than others. This gives the species that is the most resistant a very decided advantage over the others. Hardwoods when burned over will generally sprout, and this gives these species a tremendous advantage on burned areas.

The influence of fire on the soil is due almost wholly to the destruction of the humus and other organic matter in the soil. The importance of the accumulation of organic matter as a constituent of forest soil can hardly be overestimated. Where least important, on deep, rich soils, it still serves as a mulch on the surface to prevent direct evaporation of moisture. Its presence also greatly increases the moisture-holding capacity of the soil by in-

creasing both its hygroscopic and its mechanical retaining powers. It also acts as a fertilizer. The burning of this humus liberates the nitrogen of the organic matter as free nitrogen, thereby destroying absolutely the most valuable plant food constituent contained in the soil. The potash and phosphoric acid compounds which stand next in importance are mostly converted into soluble salts which are very rapidly leached away by succeeding rains.

The importance of the humic content of the soil increases with increasing gradient. In fact it is the only thing which makes the presence of forest growth on the steeper mountain slopes a possibility. This is true not only under the extreme conditions of high altitudes, where the trees are short and scrubby, although here, to be sure, the fact is more evident. On many slopes bearing the finest spruce, the presence of any forest growth whatever is due to the accumulation through the ages of a mass of organic matter which held the mineral particles of rock as they were gradually disintegrated, preventing their being washed to the bottom of the slope. The soil that obtains today on such areas is very largely organic matter, and when fire swept, if dry, is so nearly completely consumed, especially by repeated fires, that the remaining mineral particles heretofore held firmly for perhaps thousands of years are, together with the ash resulting from the burning of the organic matter, washed away until nothing but bare rocks remain. Many hundreds of acres of such lands are to be seen in the White Mountain region of New Hampshire. In some cases the trunks of trees upwards of a foot in diameter remain standing on the barren rocks from which every other sign of a former and every hope of a future timber growth has been burned and washed away.

After a severe fire on these steep slopes, the intricate network of fine rootlets, which constitutes the major part of the humus, having been burned, the rain falling on the bare soil quickly carries away in solution not only all the soluble mineral plant food liberated by the fire but also

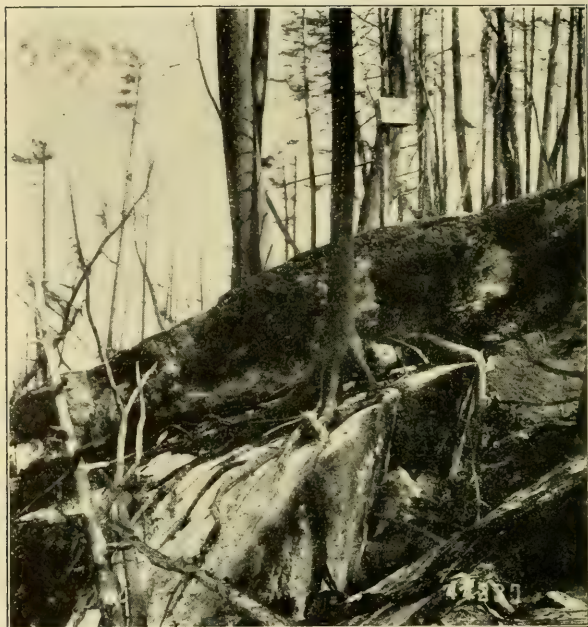


FIG. 1.—EROSION FOLLOWING FIRE ON STEEP SLOPES. ELEVATION, 2,200 FEET.



FIG. 2.—SCRUB GROWTH KILLED BY FIRE ON THE UPPER SLOPES OF MT. ADAMS.



FIG. 1.—NORTH SUGAR LOAF, ONCE HEAVILY TIMBERED, NOW PRACTICALLY BARREN.

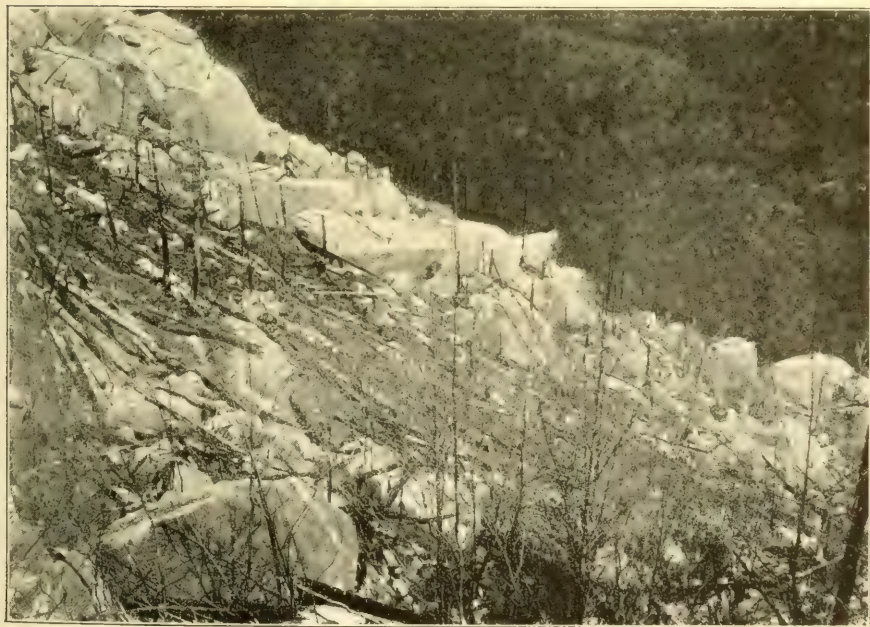


FIG. 2.—DESTRUCTION OF SOIL CAUSED BY FIRE AND EROSION.

the finest and most valuable particles of the soil itself. The extent to which this erosion may be carried depends on the amount of precipitation, the character of the soil, the gradient and the length of time before new growth starts. The leaching out of soluble plant food and the washing away of the finer particles of the soil may continue, however, long after the slope has again become covered by vegetation. Slopes of this type, owing to the rapidity of the erosion and the slowness with which they become reseeded to forest trees, are usually lost to forest production.

Character of Growth Following Fires.—Trees and other plants have different ways of gaining a foothold on a burned area. A few species produce seed that are capable of a greater or less resistance to fire. Some seed find safety by being deeply imbedded in the moss, which is rarely completely consumed over the entire area. The greater number, however, are brought in from neighboring areas by the agency of wind or animals. If the soil has not been deeply burned, most of the hardwoods will sprout from the root collar. Some, even when the soil is very severely burned, are capable of sprouting from portions of the roots which may have escaped death. Among herbs the development of shoots from roots and root stocks is by far the most common mode of reproduction after a fire.

Of the species whose seed are able to survive a considerable degree of heat, bird cherry and the common raspberry are the most noteworthy. The sumach (*Rhus glabra*) also comes up after fires from seed already in the ground, but it is of only local distribution. The seeds of the bird cherry are by far the most resistant, and survive wherever the humus is not entirely destroyed.

The bird cherry, therefore, by virtue of its presence on the ground and readiness to germinate as soon as the fire is over, together with its vigorous growth the first season and the fact that its best development takes place in direct sunlight, is one of the most characteristic features of the new growth on recently burned areas. Should the burned

area be in close proximity to land previously burned and now covered with cherry trees bearing fruit, the number of seedlings of this species which will spring up on the new burn will be very great. Birds, after feeding on the cherries, drop the seed in the forest and when this is cut or burned over, the seed, unless killed, germinate at once. As many as 1,200 of these cherry trees have been counted to a square rod. Where the growth is anything like so dense all other growth is for a time excluded, until some shade-enduring species gets a foothold under the cherry.

Yellow and paper birch seed occasionally survive a fire when they are well imbedded in moss, but they are usually carried in after fire by the wind.

The aspen (*Populus tremuloides*) and large-tooth aspen, or popple (*P. grandidentata*), are characteristic features of the growth following burns. The former is by far the more common on the poorer soils and higher elevations, while the latter is more at home on the deeper, richer soils of the valleys. The seeds of these trees are wholly dependent on the wind for distribution. That any seed present before the fire should survive is highly improbable, as a simple drying destroys their vitality, and their appendages would prevent any deep penetration of the moss where they might find safety. The willows resemble the popples in time of maturity, distribution and germination of their seed, and are frequently found on burns. The species which occur are of no commercial and little silvicultural significance.

When the burning of the soil itself has not been sufficiently severe to kill the roots of the trees, reproduction by sprouts from the root collar of the broad-leaved trees usually occurs. The resulting stand is at best very inferior. In many cases it is largely composed of mountain and striped maple, and pure stands of the former are sometimes seen, although bird cherry generally forms a large part of the growth.

The reappearance of conifers on burned areas is entirely

dependent upon the presence of seed trees sufficiently near to admit of the blowing in of the seed. It is of interest to note that where seed is available the spruce reproduces best where the soil has been most thoroughly burned; that is, where the seedlings have the best opportunity to reach the mineral soil at once. Balsam, on the other hand, prefers to germinate on a mossy spot. The result of this is, that on land thoroughly burned and afterwards well seeded by spruce and balsam the former will usually outnumber the latter fully five-fold in the succeeding growth, while on a mossy seed-bed the balsam reproduction far outnumbers the spruce. These conifers, however, seldom appear on a burn in large numbers, being crowded out by the faster-growing hardwoods which occupy the ground first. They come in slowly under the shade of the latter and gradually become a part of the stand. The spruce and balsam remain, as a rule, under the shade of the popple sufficiently long to permit the latter to develop to a merchantable size before its ascendancy is threatened. Where the land has grown up to a broad-leaved coppice, as on hardwood land, in which the maples, beech or yellow birch are prominent, the conifers make little headway and a pure hardwood forest is the inevitable result.

On pine lands a single fire is less serious than in any other type of forest. The soil rarely burns deeply enough to kill the roots of the mature trees and their fire-resisting bark protects them above ground. The soil is not usually liable to excessive erosion, because of the slight gradient, and in most places is quite free from undesirable species of undergrowth. The chief effect is the killing of all reproduction and seedling growth. Repeated burnings are, however, common on the sandy plains and where this occurs no reproduction can take place and sand barrens with a few scattered, scrubby pines are the result. On the pitch pine areas near Silver Lake, repeated fires have occurred, and there is now a dense ground cover of worthless barren oak (*Quercus pumila*) which prevents all other reproduction.

On much of the burned area in northern New Hampshire fires have occurred more than once. The tendency of a repeated burn is to increase the number of hardwoods present. Bird cherry and the popple, when burned, sprout freely from the roots, or even from parts of a root that is burned through in places. The number of sprouts usually exceeds the number of trees in the stand before the fire. Neither of the above species gains any advantage over the other by repeated burnings when two or more years elapse between the fires. When, however, fires follow each other in successive years the popple is almost totally destroyed, while the cherry sprouts as vigorously as ever. The practical extermination of the popple on several different areas in the mountains is traceable to this cause. Almost the entire growth of popple and bird cherry after second and subsequent fires is by sprouts. Any popple seed which may have blown in are at too great a disadvantage in competition with the coppice and weed growth. The same would be true of cherry seedlings, but as those first established have not as a rule reached fruiting age between the fires, and as birds would not frequent the area, it is improbable that any seed of the cherry are available.

Seedlings of paper and yellow birch rarely come in after a second fire. If the second burning is light, the birch will reproduce vigorously by shoots from the root collar; if severe, the area is usually practically destitute of birch reproduction.

Light subsequent fires on sprout land do not materially change the composition of the stand. The growth of the intervening years is, of course, lost, the trees being killed to the ground. In the subsequent sprouting the number of sprouts will probably be increased, but with a corresponding decrease in their prospective value. The latter, however, is not serious, for little else than firewood can be expected. But it must be remembered that with each repeated burning the softwood species are killed and the chance of their appearing in the new growth is materially lessened.



FIG. 1.—LAND LOGGED AND BURNED TEN YEARS AGO. NOW COVERED WITH ASPEN, WHITE BIRCH, AND BIRD CHERRY.



FIG. 2.—SEVERE BURN ON CUT-OVER LAND. COMING UP TO BIRD CHERRY.



FIG. 1.—LOGGING CAMP OF J. E. HENRY & SONS, LINCOLN.



FIG. 2.—WOOD BURNING LOGGING ENGINE WITH AN EXCELLENT SPARK ARRESTER.

The development of herbaceous growth, which is uniformly an accompaniment of repeated fires, is one of their most serious features. The soil, after it has once been thoroughly depleted of its organic matter, is never burned sufficiently deeply by subsequent fires to destroy the roots and root-stocks of the perennial herbs and grasses which have found their way in. The result is that with each succeeding fire the possibility of reproduction by seed of any valuable forest tree becomes more and more hopeless, and the land is with each burning given over more completely to inferior sprout and weed growth. The chief perennials, which are found on such lands, are raspberry, fireweed, blueberry, sorrel, pigeonberry, blackberry, goldenrod and brake fern.

Causes of Fires.—The principal causes of forest fires, in the order of their importance, are railroads, carelessness in clearing land, fishermen and campers and maliciousness.

Railroads undoubtedly set very many more fires than are due to any other single source. That the aggregate amount of damage done is very great cannot be better illustrated than by the fact that a division superintendent of a railroad operating in the White Mountain region had in his office on September 12, 1903, 554 separate reports of fires causing a greater or less amount of damage to neighboring property during the season of 1903. These fires originate either from sparks from the smoke stack or from hot coals dropped from the ash pan. That this latter method is a very effective way of setting a fire was well shown at Carroll in July. The Maine Central express, in rounding the curve at this point, dropped a quantity of glowing coals, some of which were thrown as much as eight feet beyond the rail by the centrifugal force exerted as the engine rounded the curve, and instantly started a number of fires in the grass and litter for a distance along the line of more than forty yards.

Fires from coals from the ash pan are invariably near the track, and are usually at once conspicuous. Those

originating from sparks from the smoke stack may occur at a considerable distance from the track and may smoulder for a long time before being discovered. On this account they are more dangerous. They are also probably more frequent. There seems to be no entirely satisfactory spark arrester on the market, but that the danger can be very greatly lessened by the use of the best one available is certain. There can be no excuse for the dropping of coals from the ash pan when the train is running at high speed. This is simply a matter of carelessness.

The substitution of oil for coal as a fuel for locomotives, or the use of electric motive power, would mean absolute safety. The success of the former on an Adirondack railway and the very marked reduction in operating expenses by the latter substitution on the lines of the Interborough Rapid Transit Company of New York commend them to the consideration alike of the railroad companies operating in the forest lands and to the state legislators.

Among the numerous causes of forest fires the getting beyond control of fires set for the purpose of clearing land occupies a prominent place. There are many persons among the farming community who do not appreciate the danger of burning brush in the neighborhood of woodlands during a dry time. Unfortunately the danger from this source is not due entirely to ignorance or simply to thoughtlessness. There are many persons who will not consult the safety of their neighbor's property in this matter, even if the danger has been clearly pointed out. The evil clearly calls for both educational and restrictive measures.

Fires caused by fishermen and others who build camp fires in the woods are not infrequent, and many of the most disastrous fires have been attributed to this cause. It is a common practice for fishermen to build fires for warming coffee, etc., or to keep away flies and mosquitoes. Many who indulge in this practice have little or no knowledge of the precautions to be observed in kindling and extinguishing fires in woodlands. This is more serious in the

case of fishermen than in that of most other campers because of the fact that the best fishing season happens to be at the time of year that the danger of forest fires is most imminent. The places where these fires are kindled are usually far away in the woods and are not infrequently in obscure places along small streams where it is very improbable that they will be seen, and then probably only after they have got beyond control. It is not surprising, therefore, that timberland owners dread the camp fires of the fishermen perhaps more than any other cause of fire, since it is one of the causes over which they have no control and for the damage from which there is no recourse in case of loss.

Among the minor causes of fire, carelessness of smokers in dropping burning matches and cigar stubs probably takes first place. The setting of fires to improve the berry crops is also of not infrequent occurrence. Fires are also occasionally set for revenge or out of pure maliciousness.

Dangerous Seasons for Fires.—In New Hampshire there are two seasons when the danger of forest fires is much greater than at other times. The first and most dangerous fire season is due to begin soon after the snow melts in the spring and continues till the leaves come out. The second begins about the middle of September and continues till the last of October. These dangerous seasons are due to a combination of meteorological and physiological conditions. The meteorological conditions in the order of their importance are rainfall, air movement, humidity, sun and temperature. The physiological conditions are the opening and the fall of the leaves and the springing up and maturing of the herbaceous vegetation.

The physiological factors vary but slightly from year to year, and then only in regard to the time of their occurrence. Thus, while there are two especially dangerous seasons, a period of danger may develop outside the limits of these should a very abnormal deficiency in rainfall occur; and while the two danger seasons normally begin and end

at the time mentioned, either may begin or end earlier or later according to the weather and season. In some years there may be no danger season at all.

The humidity of the atmosphere has a very important bearing on the fire seasons. The lower the humidity, the greater the absorption of moisture from the forest floor by the atmosphere. April has an extremely low relative humidity, and May and even June are both below the average. The rainfall in the spring months is also below the average. April has an average precipitation of less than 2.1 inches, as compared with nearly four inches in the month of August. May has a fair rainfall, but also below the average, while the wind movement for these months greatly exceeds that in the summer. The absence of green herbaceous growth on the ground, and of leaves on the broad-leaf trees, allow the full sweep of the wind and the heating and drying of the leaf litter by the direct rays of the sun. With the increased rainfall in June and the development of the leaves, the danger season passes away and during the summer months fires are the exception rather than the rule.

The fall fire season, although rarely as dangerous as that of the spring, frequently witnesses very disastrous fires. The rainfall of about four inches in August decreases to a little over three inches in September, and to still less in October, which ranks as one of the driest months of the year. The air movement meanwhile increases from a minimum of 140 miles per day in August to 175 miles per day in October. The leaves also are rapidly falling and the herbaceous vegetation is for the most part mature. The conditions, therefore, closely resemble those in the spring, although not quite so extreme.

Prevention of Fires.—The prevention rather than the extinguishing of fire must be the object of any successful attempt at fire protection, and on the success which it meets depends the possibility of forestry, and with it the possibility of continued lumbering.

Fire protection is essentially a function of the state. The

utilization of the township as a working unit for fire protection has been tried in many states, with little or no success. New Hampshire, not being a land-owning state, the direct loss in stumpage values by fire falls wholly on individuals and lumber companies. It is nevertheless true that such loss is essentially a state loss. The destruction of the soil by fires that follow lumbering may not greatly concern the individual who owns the land but who does not hope to live to reap a second crop. To the state, however, it is of first importance that the natural resources represented by the soil capacity should not be deteriorated or destroyed.

This consideration points to a duty on the part of the state to organize and direct the work of fire prevention and fire fighting. The first duty of the state in this direction is to educate the public sentiment concerning the seriousness of the fire question and to inform the public in regard to fire laws, but it shall also maintain a force for the prevention and fighting of forest fires. It is worth consideration also whether the state may not fairly require reasonable precautions to be taken by forest owners to prevent the existence of conditions which constitute a menace to surrounding property. This protection could very properly be furnished by an increased tax on cut-over land where all the timber has been removed, as here danger from fire is most severe. The taxes on the land might be very properly remitted altogether when the owner provides for fire protection to the satisfaction of the chief fire warden. So thoroughly alive are the lumbermen of New Hampshire to the necessity and value of efficient fire protection that no serious objection to a tax of this kind is anticipated. Should such develop, however, it is evident that if the lumbering of forest areas is not yielding a sufficient profit to the operators to enable them to pay without hardship half the cost of protecting themselves and the community from the danger created by their operations, it is not good policy that the lands should be lumbered, and the tax would then

serve the valuable function of conserving the forests until the stumpage value advanced sufficiently to pay for the risk incurred by the lumbering. The exact amount of this tax can be easily adjusted to suit the requirements of the service.

Considerable areas of forest lands in New Hampshire are held by hotel companies which are especially interested in the prevention of fire in their neighborhood. It is very possible for such companies to provide for a system of trails covering the tract, which could at any time be utilized as a means of communication and transportation between headquarters and a point of danger. In an emergency they could be used as fire lines, and at other times they would provide pleasant walks for the guests. Should a railroad pass through the tract, a trail should parallel it on either side at a distance of about 50 to 75 feet from the track, and all brush and other *débris* between the trail and the railroad should be piled and burned at a safe time. Where feasible, trails should follow the crests of any low ridges, which are particularly favorable places at which to make a stand in fighting fire. A number of the trails should be sufficiently open to admit of transportation of tools and provisions by pack horses, and all should be carefully mapped. In the building of such trails, old logging roads should be utilized so far as possible. They can be very cheaply transformed into excellent paths and make very effective fire lines.

The extensive use of the steam railroad in logging operations in New Hampshire calls for some special attention in connection with this subject. A number of the lumber companies using this means of transportation are exceedingly careful in their management, and have been very successful in the prevention of fires. The chief points to be observed are as follows: A strip about 30 feet wide on each side of the track should be cut clean and all brush carefully burned. The grass and weeds should be cut on this strip at least twice during the season and removed or

burned. A strip of forest land about 300 feet wide should be left untouched on each side of the track between the cleared strip and the area where logging is carried on. The timber on these strips can be taken quite as satisfactorily at the end as at the beginning of the job, and they provide at no cost whatever a very effective fire line.

Water barrels should be placed at frequent intervals. These may be filled from the engine tank. They provide a supply of water for the patrol, who should follow up the train during a dry time.

The patrolling of the line during the danger season is of the utmost importance. A four-wheeled railway bicycle is very convenient for the purpose. The patrol should follow up every train during the dry season, extinguishing any incipient fire with a pail of water which is carried on the hand car and which can be replenished from time to time from the barrels along the track.

A long hose which can be attached to the engine tank should be available. It is very useful in wetting out a fire near the road, that is under control but smouldering in a duffy soil.

The use of the most approved spark arresters and devices to prevent the dropping of coals from the ash pan are, of course, of primary importance. The use of coal in preference to wood for fuel is good fire insurance, even when the extra cost is considerable. If the season is especially dry it may be necessary to run the engine at night only, or to discontinue using it altogether until rain falls.

Methods of Fighting Fires.—Promptness of action on the discovery of a woods fire is quite as essential to success as in fighting any other kind of fire. Should a fire be spreading, the most essential thing is to stop it. This may often be done by vigorously beating it out with spruce or balsam boughs. If water is at hand, that is, of course, the next resort. A hoe, spade or shovel may be used to excellent advantage in throwing mineral soil from in front on the burning margin. This checks the flames and at the same

time makes more or less of a fire line. Having stopped the spread of the fire, a fire line must next be made around the area by the removal of any inflammable material from a narrow strip, after which attention may be given to the extinguishing of the fire on the area itself. If water be at hand it will greatly simplify the matter; if not, the only recourse is to bury the burning matter with mineral soil.

Aside from fires on cut-over lands, where large quantities of brush make it possible for a fire, once well started, to run at any hour of the day or night, forest fires do not usually begin to run until about ten o'clock in the morning and die down again towards evening. The dead leaves, twigs, humus, etc., are all very hygroscopic and absorb moisture from the atmosphere very rapidly as their temperature falls toward evening. This, together with the decrease of the wind, soon brings the ordinary forest fire under control, and there is little danger of a fresh outbreak until the following day.

When a forest fire with a good start is running before a strong wind, it is usually impossible to do any very effective work in front of it, and attention should be given to fire lines along the sides to prevent its spread laterally, as the wind may change at any time and drive the fire in another direction. This is especially imperative if valuable property should be threatened by such a change of wind. As soon as the fire can be checked in the evening, every effort must be made to complete the fire line around the area before ten o'clock the next morning.

The character of the fire line to be made around a burning area depends on the character of the fire. If it is a light surface fire running over a moist soil, it is sufficient simply to remove all inflammable material from the surface of the ground in a strip three to six feet wide. If, however, the soil itself is dry, as is often the case, a trench must also be dug through the organic soil or duff. The soil removed should be thrown on the side of the trench towards the fire.



FIG. 1.—SKIDWAY AT J. E. HENRY & SONS, CAMP NO. 12.

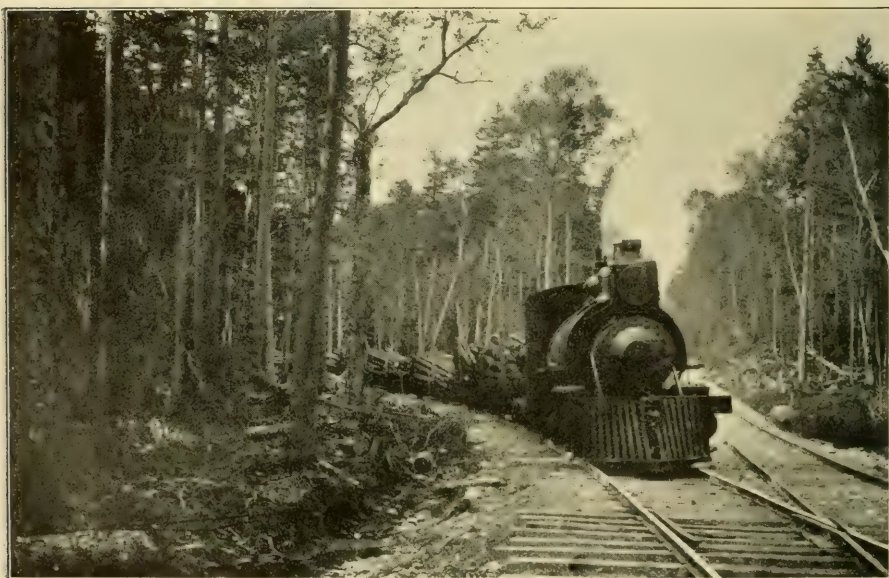


FIG. 2.—LOGGING TRAIN, LINCOLN.



FIG. 1.—FELLING A THIRTY-INCH SPRUCE ON MT. BOWMAN.



FIG. 2.—YARDING LOGS ON MT. BOWMAN.

After the fire is under control the fire lines should be patrolled night and day until absolute safety is assured, or until rain falls. This is of the first importance in order to make sure that no fire gets across the fire line. A fire may smoulder away for days and even weeks after it is pronounced out, only to break out with as great fury as ever on some especially favorable day. Even a fairly heavy rain may not entirely extinguish a duff fire.

Care should be taken to fell burning stubs, after fire is under control. These can best be seen at night and are particularly dangerous because of the distances to which they may throw their sparks.

The number of men required to handle a fire is the number needed to prepare an efficient fire line around the area, and this will necessarily vary in nearly every case. In the organization of the force it is rarely possible for one boss to handle more than ten men satisfactorily, and on night work the number should be reduced to five. The axe, hoe and shovel are the tools which must be relied upon for fire fighting under most circumstances. Occasionally it is possible to use a plow in making a fire line, and it should be used whenever practicable because of the great saving in time and labor. Pails should always be available and may, when near a water supply, be used to great advantage.

As a means of combating a running fire, back firing is rarely practicable, and when the wind is very high it may be entirely out of the question. However, if a road, good trail or brook be available as a fire line, with plenty of men to prevent the back fire itself from getting across the line, it may be possible to do something. Usually its use is limited to checking the spreading of a fire laterally from the direction of the wind and in the protection of valuable property at the sides of the fire. In any case the first essential is a good fire line and the next a sufficient force of men to keep the fire on the right side of the line. Indiscriminate attempts at back firing can only increase the destruction.

The prompt payment of the men employed in fire fighting and patrol is of prime importance. The lack of it always has been and still is one of the most serious drawbacks to efficient fire protection in several of the states which have, otherwise, well organized systems. The time required to close the accounts varies in different states from several months to more than a year. Such delays in payments make it difficult to get together a force of men to fight fires even if the pay is high.

FOREST INDUSTRIES.

LUMBERING IN NEW HAMPSHIRE.

From the first settlement of the region lumbering has been a leading industry. There was always a demand for building material and ship timber from the towns along the coast. The first settlements were in the broad valleys of the main rivers, the Connecticut, the Saco and the Androscoggin. The forest was looked on as more or less of an obstruction to agriculture, but the immense veteran white pines were always recognized as valuable. Extracts from the history of the early settlements are of interest. That of the settlement of Shelburne, on the Androscoggin, in 1800, records: "For some years clearing land and raising food was the principal industry. The largest and straightest trees were reserved for the frames of the new houses; shingles were rived from the clearest pine; baskets, chair bottoms, cattle bows, etc., were made from brown ash butts; all the rest of the timber cleared was piled and burned on the spot. Logging was always a standard industry and the timber holds out like a widow's meal and oil. All the pines went first; nothing else was fit for building purposes in those days; tables were made two and one half feet wide from single boards without knot or blemish."

In a memoir of Lucy Crawford on the early settlement of Conway, in the latter part of the eighteenth century,

we read: "They soon began the lumbering business by floating logs and masts down the Saco to its mouth, where they received bread stuff and other necessities of life in exchange."

By 1852 the lumber industry had become well established. A gazette of that year records: "In the town of Berlin there are three large sawmills, two furnishing employment to 50 to 60 men and a third for about 40. There are several others employing 5 to 10." And further on it says: "In the town of Errol several big streams unite with the Androscoggin, and upon this stream have been expended quite recently more than \$100,000 in erecting dams, etc., for the purpose of holding back the water so as to enable the companies engaged in the enterprise to drive logs from the upper lakes to market through the whole season."

These extracts give an indication of the growth of the lumber industry. The present lumbering in the region can best be described under three heads: (1) in the southern townships, where the cutting is all of so-called second growth; (2) in the White Mountain region proper, where there are still considerable areas of uncut land; (3) in the north country, where there are vast stretches of lightly culled and virgin forest.

Lumbering in the Southern Townships.—The lumbering here has adapted itself to the change in forest conditions. There are no extensive tracts of uncultured timber which would keep a large mill running. Numerous small mills scattered over the country cut the second growth as it becomes merchantable. The manufactured product is very varied; everything is made, from rough boards to excelsior, from flooring to handles and bobbins. Every kind of timber is utilized, the largest percentage being of second-growth white pine and spruce for boards and dimension stuff. The hardwoods are used for flooring, cordwood, bobbins, shoe pegs, etc.

There are many small water-power mills which do custom

sawing for farmers in the vicinity. There are also portable mills which are moved into the tracts of second growth and cut it into boards on the spot. There are also many small stationary steam mills, which get sufficient stumpage from the surrounding woodlots for a continuous supply. The lumbering in this region is on a small scale, but also on a permanent intensive basis.

Where the company owns its own timberland, the cutting is usually conservative and careful; but when buying stumpage, they usually cut as clean as is profitable and pay no attention to injury of young growth. The character of the cutting also greatly depends upon whether the mill is portable or stationary. The portable mills are transported right into the midst of a 50- or 100-acre woodlot, so there is only the cost of cutting and yarding and no long haul. Hence it is profitable to cut everything which can be converted into a board and the cutting is accordingly clean.

Stationary water-power mills, which do mostly custom sawing for farmers, are most conducive to conservative lumbering. The cost and running expenses of the mill are slight, and it can accordingly be run at irregular intervals when there are logs to be cut. Stationary steam mills are more expensive, and have to do more sawing to realize a proper interest on the capital invested. The policy of these mills, however, is generally to cut conservatively, on their own land at least, so as to obtain the most possible timber in the long run and a continuous supply.

Lumbering in the Mountains.—Logging in the mountains is all by large companies and on a large scale. The timberlands are owned almost entirely by seven large companies. The Berlin Mills Company, the International Paper Company and J. E. Henry & Sons are the largest concerns operating in this region. These large concerns cut upwards of 75 million board feet a year, mostly of virgin timberland. About two thirds of this goes into lumber and the other third into pulp. The policy of all the com-



FIG. 1.—STABLE AT CAMP NO. 10, LINCOLN.

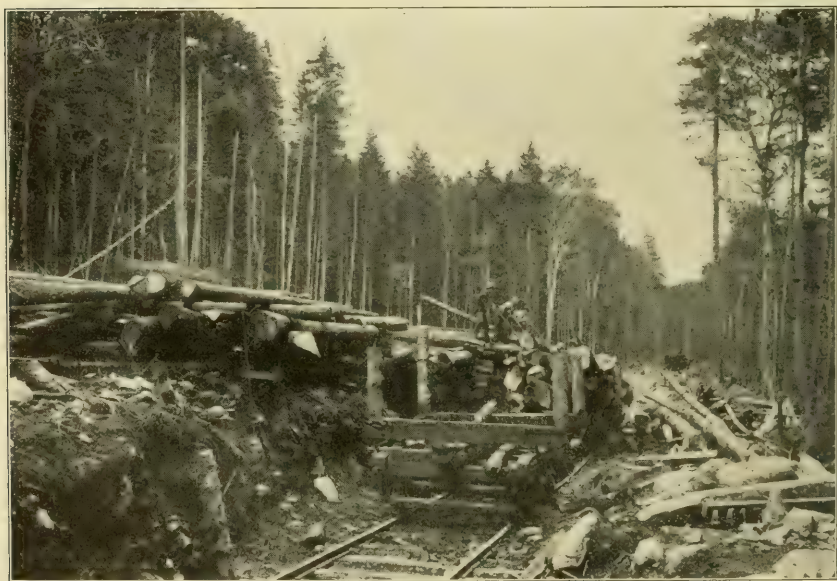


FIG. 2.—LOADING CARS AT LOG LANDING.



FIG. 1.—LAND CUT OVER TWENTY YEARS AGO TO A DIAMETER LIMIT OF FOURTEEN INCHES. NOW READY FOR ANOTHER CUT.



FIG. 2.—SPRUCE FLAT, CUT OVER TO A DIAMETER LIMIT OF FOURTEEN INCHES TWENTY YEARS AGO AND AGAIN IN 1903. EXCELLENT YOUNG GROWTH LEFT.

panies is to hold the land after cutting. Most of the large concerns desire to cut conservatively if possible, or at least to save the young growth for a future crop. This policy is, however, seldom carried out in the mountains.

Clean cutting is practised on all the steeper slopes and little is left after lumbering. One reason for this is that windfall is very severe and any trees left standing are almost certain to be windthrown. On the lands of one company in particular no thought is given to a second crop: everything on the steep slopes is cut. The logs are rolled down the slope to the road below, over the non-merchantable stuff and the hardwoods, which are felled down the slope and form a good rolling bed. The result is a veritable fire trap that lasts for years. On the more moderate slopes the softwoods are got out without cutting the hardwoods. The policy of this company is to cut all their timber and then move into the west, where it already owns large tracts of forest.

The most conservative cutting in the White Mountains has been done by D. and C. G. Saunders in Livermore, who cut simply to supply their own mill. This has an output of only four million board feet per year. The Messrs. Saunders cut to a rough diameter limit of 10 inches on the stump and has been over the same ground twice, having cut the first time to a limit of 14 inches. It must be remembered, however, that no pulpwood is cut on this land.

The general policy of the International Paper Company is to cut fairly conservatively, so that the same area may be again cut within 30 to 60 years, but in the absence of careful inspection the policy is not well carried out. Most of the logging is let out to jobbers who bring the logs to the bank of the stream where they are to be driven, or to the railroad. There are stipulations in the contracts between the jobbers and the company in regard to the cutting, but without more stringent inspection they are not fully effective.

Lumbering in the North.—In the northern part of the

state nearly all the lumbering is carried on by the Connecticut Valley Lumber Company, the Berlin Mills Company and the International Paper Company. Upwards of 100 million board feet of logs are taken out yearly by these companies, almost exclusively spruce, mixed with about 10 per cent. balsam. The lumbering here is characterized by long hauls and long drives, the mills being located at a considerable distance from the source of supply. There are no large mills in the region.

The Berlin Mills Company cuts the most conservatively of any in this region, and is the only one which employs an expert forester. His duties are to inspect the various cuttings to determine the amount of unnecessary waste, to look out for diseased and infected timber which should be cut immediately in order not to be a total loss, and to make topographic maps of the company's lands, useful in logging operations.

The Connecticut Valley Lumber Company cuts chiefly for sawlogs and in consequence considerable young stuff is left on their lands after lumbering.

In general, lumbering in the north can be put on a more conservative basis than in the higher mountains where the slopes are steeper and windfall more severe. But even there much can and should be done to prevent needless waste in logging and exposure of the cut-over lands to fire. No policy of conservative cutting, however, will be satisfactory unless it is wisely conceived and properly carried out.

THE WOOD INDUSTRIES.

The wood-consuming industries in the region considered by this report manufacture paper and wood pulp, lumber, bobbins, shoe pegs, crutches, excelsior, spools, rakes, handles, chairs, racket frames, picket sticks, wood shanks, veneer and ladder rounds.

The paper and wood pulp, lumber, bobbin, shoe peg and crutch industries each comprise three or four establishments. The remaining industries each comprise one or two establishments. They are below described collectively under the head of miscellaneous industries.

The amount of wood consumed by the wood industries, and also the amount of wood cut in the region for the year ending June 30, 1903, are shown in the two following tables:

TABLE XXIII.—TIMBER CUT IN NORTHERN NEW HAMPSHIRE, JULY 1, 1902, TO JUNE 30, 1903.

Industry.	Total.	Spruce.	Pine.	Hemlock.	Hardwoods.
	<i>1000 board feet.</i>	<i>1000 board feet.</i>	<i>1000 board feet.</i>	<i>1000 board feet.</i>	<i>1000 board feet.</i>
Paper and pulp.....	105,552	105,552			
Lumber.....	155,570	120,195	17,213	6,679	11,483
Bobbin.....	6,709				6,709
Shoe peg.....	3,081				3,081
Crutch.....	150				150
Miscellaneous.....	2,500				2,500
Total.....	273,562	225,747	17,213	6,679	23,923
Per cent.....	100.0	82.5	6.3	2.4	8.8

TABLE XXIV.—WOOD CONSUMED BY MILLS IN NORTHERN NEW HAMPSHIRE, JULY 1, 1902, TO JUNE 30, 1903.

Industry.	Number of establish- ments.	Total.	Spruce.	Pine.	Hem- lock.	Hard- woods.
		<i>1000 board feet.</i>	<i>1000 board feet.</i>	<i>1000 board feet.</i>	<i>1000 board feet.</i>	<i>1000 board feet.</i>
Paper and pulp	6	167,070	167,070			
Lumber.....	65	131,635	98,185	16,128	6,334	10,988
Bobbin.....	9	6,709				6,709
Shoe peg.....	3	2,731				2,731
Crutch.....	4	150				150
Miscellaneous.....	9	2,500				2,500
Total.....	96	310,795	265,255	16,128	6,334	23,078
Per cent.....		100.0	85.4	5.2	2.0	7.4

A comparison of these two tables shows that the total amount of wood consumed by the mills in this region ex-

ceeds the total cut by over 37 million board feet. Moreover, a large part, over 24 million board feet, of the wood cut goes to outside mills; therefore, the actual excess of wood consumed over the amount received from this region is over 61 million board feet, and constitutes nearly 20 per cent. of the wood consumed in northern New Hampshire. This is explained by the fact that most of the pulp companies are preserving their own supply of timber, preferring to draw upon an outside source, chiefly Canada, and that the demand for wood, especially spruce, is greatly in excess of the supply.

The chief commercial species is spruce, which represents 82.5 per cent. of the total cut of all species. Mixed with spruce is balsam to the amount of about 10 per cent. Chief among other conifers are white pine and hemlock. The principal hardwoods are paper and yellow birch and sugar maple. Practically all species find a market in some form of product, as is shown in the following table:



FIG. 1.—LARGE LANDING ON LOGGING RAILROAD.



FIG. 2.—GRADED LOGGING ROAD, LINCOLN.



FIG. 1.—SPRUCE LOGS ON SKIDWAY. LIVERMORE.



FIG. 2.—MILL AT LIVERMORE.

TABLE XXV.—USES OF THE COMMERCIAL SPECIES.

<i>Spruce.</i>	<i>Balsam.</i>	<i>White Pine.</i>
Pulp	Pulp	Lumber
Lumber	Lumber	Dimension
Dimension	Plank	Plank
Plank	Boards	Boards
Boards	Flooring	Flooring
Flooring	Ceiling	Ceiling
Ceiling	Shingles	Shingles
Clapboards	Lath	Lath
Shingles	Box shooks	Box shooks
Lath	Excelsior	Clapboards
Box shooks		
Piano boards		
Pump tubing		
	<i>Paper Birch.</i>	<i>Yellow Birch</i>
<i>Hemlock.</i>	Lumber	Lumber
Lumber	Flooring	Flooring
Dimension	Dimension	Dimension
Plank	Bobbin stock	Bobbin stock
Boards	Bobbins	Bobbins
Flooring	Speeders	Speeders
Ceiling	Quills	Quills
Shingles	Shoe pegs	Spools
Lath	Spools	Crutches
Box shooks	Crutches	Shoe shanks
Pulp	Shoe shanks	Staves
	Staves	Veneer
<i>Sugar Maple.</i>	Veneer	Dowels
Lumber	Rake teeth	Chair stock
Dimension	Dowels	Piano backs
Flooring	Chair stock	
Bobbin stock		
Bobbins	<i>Beech.</i>	<i>Popple or Aspen.</i>
Speeders	Rough lumber	Excelsior
Quills	Bobbin stock	Pulp
Crutches	Bobbins	Boxes
Staves	Speeders	Veneer
Dowels	Quills	
Chair stock	Chair backs	<i>Silver Birch.</i>
Piano backs	Staves	Bobbin stock
Handles	Piano backs	Shoe pegs
Veneer	Dowels	Spools
	<i>Basswood.</i>	
<i>White Ash.</i>	Excelsior	<i>Cedar.</i>
Handles	Boxes	Shingles
Picket sticks		
Racket frames	<i>Tamarack.</i>	<i>Red Maple.</i>
Rakes		Veneer
Staves	Rough lumber	Chair stock
Ladder rounds		
	<i>Red Oak</i>	<i>Gray Birch.</i>
<i>Red Pine.</i>	Chair stock	Bobbins
Lumber (together with white pine)	Ladder rounds	

“Silver” birch in the above table is merely a local name for second-growth yellow birch. Its chief value is its minimum amount of heartwood, which makes it especially desirable for peg wood. Paper birch is known also as white birch.

Stumpage and log values of the commercial species are shown in Table XXVI, which was compiled from the various mills in the several industries. The values were arranged according to the amount of timber of each species consumed by each mill. The values per cord represent the averages of actual prices paid per cord, and were not deduced from the values per 1,000 board feet.

TABLE XXVI.—AVERAGE VALUE OF THE COMMERCIAL SPECIES.

	On stump.		Delivered at mill.	
	Per 1,000 board feet.	Per cord.	Per 1,000 board feet.	Per cord.
Spruce.....	\$3.77	.....	\$10.18	\$6.43
White pine.....	3.74	.....	8.32	.....
Hemlock.....	2.90	.....	7.28	.....
Paper birch.....	2.97	\$1.77	10.05	7.46
Yellow birch.....	2.96	1.68	9.97	6.75
Sugar maple.....	2.99	1.39	10.06	6.07
Beech.....	2.90	1.10	8.00	5.95
Popple.....	.....	1.60	.....	5.13
White ash.....	10.00	.....	21.57	.....
Cedar.....	3.00	.....	9.00	.....
Red oak.....	.....	.....	12.67	.....
Basswood.....	.....	.....	.....	4.50
Tamarack.....	.....	.....	9.00	.....
Red maple.....	.....	.....	8.00	.....

A glance at the figures given for paper and yellow birch and sugar maple in the above table shows a seeming discrepancy in the values per 1,000 board feet and per cord, in that the values per 1,000 board feet for the three species are practically the same, whereas their values per cord differ considerably. The explanation of this is that the lumber industry regards the three species indiscriminately; hence their almost equal values per 1,000 board feet. On the other hand, of those industries which buy by the cord, the peg-wood industry has a decided preference for paper birch and "silver" birch, must have selected stock and so pays for it accordingly. As a matter of fact, the comparative values of these three hardwoods is better shown by the price per cord delivered at the mill.

The data from which the values for beech, popple, ash, cedar, oak, basswood, tamarack and red maple were computed were decidedly meagre, owing to the small amounts of these species used within this region. However, it is believed that their comparative values are fairly well shown by the figures here given.

In 1900 the relative positions of the lumber and paper industries among the various industries in New Hampshire were respectively third and fifth. Cotton and print cloth and boots and shoes were respectively first and second, and woolen goods fourth.

THE PAPER AND WOOD PULP INDUSTRY.

Until about 1870 practically all paper was made from rags. Since then, in the making of many grades of paper, especially newspaper, wood fibers have been almost completely substituted. The wood fibers are transformed into pulp by two processes—mechanical and chemical. By the mechanical process, blocks of wood are held against a revolving stone by means of hydraulic pressure and the fibers ground into a pulp. The product is known as ground wood pulp. There are two chief chemical processes—the caustic soda and the bisulphite processes. The latter only concerns this report.

By the “bisulphite” process, the wood is cooked in a solution of sulphurous acid and water under conditions of high temperature and pressure. The product is known as sulphite pulp. The grinding process produces a short fiber, whereas the “sulphite” process produces a relatively long fiber which is practically intact and gives to newspaper the essential quality of strength. The latter process also produces fiber of a better quality, because free from resinous matter found in pulp prepared by grinding. Ground wood and sulphite fiber, the latter forming from 15 to 25 per cent. of the mixture, produce most of the newspaper made in the United States.

The growth of the paper and wood pulp industry in New

Hampshire during the decade between the census years 1890 and 1900 eclipses that of any other state in the Union. During this period the value of its product has multiplied nearly six times and the amount of capital invested nearly seven times.

TABLE XXVII.—THE PAPER AND WOOD PULP INDUSTRY OF NEW HAMPSHIRE.

[From Twelfth Census.]

Year.	Number of establishments.	Average number of wage earners.	Total wages.	Total capital.	Value of product.
1890.	15	520	\$220,122	\$1,221,491	\$1,282,022
1900.	29	2,391	1,036,856	8,163,081	7,244,733

The nearest approach to this increase of any of the leading pulp-producing states is shown in the census figures for Maine, where in the corresponding decade the capital invested and the value of the product have each multiplied more than four times. In 1890 the relative position of New Hampshire among other states in the value of its product and invested capital was respectively thirteenth and fourteenth; in 1900, its position with respect to both product and capital was sixth. The term "establishment" is used as representing a mill or mills owned by one individual, firm or corporation, when located in the same town.

The advance of New Hampshire to one of the leading states in this industry is attributable to the greatly increased use of wood pulp in the manufacture of paper, to its large supply of spruce—the preferred wood for pulp—and to its nearness to supply from Canada and Maine. In 1900 the total cost of all materials used in New Hampshire in the manufacture of paper was nearly \$4,000,000; of this, less than \$300,000 represents the total outlay for rags, waste paper and manila stock, while over \$2,000,000 was paid for wood and wood pulp. Rags and similar materials play a very small part in the manufacture of paper in the

state and in the region considered by this report absolutely no part whatever.

The following table shows the quantity and cost of the various materials used in the paper industry in New Hampshire in 1900:

TABLE XXVIII.—MATERIALS USED BY THE PAPER AND PULP MILLS OF NEW HAMPSHIRE IN 1900.

[From Twelfth Census.]

Materials.	Cords.	Tons.	Cost.
Wood:			
Domestic spruce—			
For ground wood.....	41,035		\$242,055
For sulphite fiber.....	68,006		413,141
Canadian spruce—			
For ground wood.....	4,089		24,756
For sulphite fiber.....	83,050		474,578
Other pulp wood, for ground wood.....	720		3,430
Total.....	196,900		\$1,157,960
Rags, including cotton and flax waste and sweepings.....		2,700	61,573
Old or waste paper.....		6,327	121,466
Manila stock, including jute, bagging, rope, waste, threads, etc.....		2,947	64,684
Total.....		11,974	\$247,723
Fiber:			
Ground wood pulp purchased.....		21,266	338,316
Soda wood fiber purchased.....		2,396	95,946
Sulphite wood fiber purchased.....		12,123	418,680
Other chemical fiber purchased.....		21	372
Total.....		35,806	\$853,314
Chemicals.....			459,303
Clay.....			52,902
Colors.....			24,000
Sizing.....			11,421
All other stock.....			36,759
Fuel, rent of power and heat, mill supplies, freight, and all other materials.....			1,109,952
Total for New Hampshire.....	196,900	47,780	\$3,953,334
Total for United States.....	1,986,310	1,701,319	70,530,236

The county of Coös is the great paper and pulp producing region in the state. In 1900 it had more than 61 per cent. of the total capital invested, bought over 65 per cent., in value, of the materials used, and yielded, in value, more than 68 per cent. of the products. Four of the six establishments in the region examined are in Coös county.

TABLE XXIX.—TIMBER CUT IN NEW HAMPSHIRE FOR PULP, DURING THE YEAR ENDING JUNE 30, 1903.

Source of supply.	Cords.	Board feet.
Northern New Hampshire.....	172,020	105,552,000
Cut for mills in northern New Hampshire.....	138,131	84,931,000
Cut for mills elsewhere in New Hampshire and in Vermont.....	33,889	20,618,000
All cut for mills outside northern New Hampshire	4,640	3,093,000
Total for New Hampshire.....	176,660	108,645,000

An important showing of the above table is the comparison possible of the amount of wood cut for pulp in the region considered by this report with that cut in the rest of the state. Of the total for the whole state, 97.4 per cent. comes from this region, and of the total for this region 80.3 per cent. is consumed by mills located in it. The estimate in board feet is chiefly for a basis of comparison with the amount of wood consumed by the other industries. In the case of some mills, this estimate was not available and had to be deduced from the estimate per cord. This was accomplished by a converting factor, according to the particular log rule used. The Blodgett (115 cubic feet) and the Bangor Rules allow $15\frac{1}{8}$ cords per 1,000 board feet, the Scribner Rule, 12-3 cords. Obviously, such estimates are only approximately correct, but sufficiently so, nevertheless, for this purpose.

As previously stated, spruce is the chief species used for wood pulp. Balsam to the amount of 10 per cent. is generally allowed and, by some mills, a very little hemlock and popple, the aggregate of which is inconsiderably small. Of the total cut of spruce for pulp in northern New Hampshire, balsam forms 9.1 per cent.; in the rest of the state, from 1 to 5 per cent. The pulp mills owning timberland or buying stumpage as a rule cut balsam along with spruce; but when buying wood delivered at the mill, they want pure spruce and will rarely accept any balsam. One large paper company, which owns perhaps the finest body of timber in

the region, cuts absolutely no balsam for pulp. Spruce is especially desirable for wood pulp owing to its long fiber and freedom from pitch. Some of the chief objections to other species are listed below:

Balsam:

Pitch.—Partially eliminated by the chemical process; not eliminated by the mechanical process, and in consequence “pitch” the wire screens of the pulp machines.

Short fiber.—Making a relatively weaker paper.

Hemlock:

Short, brittle fiber.—Working poorly on the pulp cylinders by not “sheeting,” or holding together well.

Discoloration (reddish tinge).—Partially eliminated by the chemical process. This sometimes causes the pulp to be mistaken for poorly cooked spruce.

Knotty.—Hard to work.

Popple:

Too soft for newspaper.

Short fiber.

Lack of strength.

The extent of the manufacture of wood pulp in the region considered by this report is shown in the two following tables, which give, besides the output for the year ending June 30, 1903, the amount of wood consumed in producing the output and the sources from which the wood was obtained.

TABLE XXX.—OUTPUT AND CONSUMPTION OF PULP MILLS IN NORTHERN NEW HAMPSHIRE, JULY 1, 1902, TO JUNE 30, 1903.

Number of establishments.	Output.		Wood consumed in producing output.
	Ground wood.	Sulphite fiber.	
	<i>Tons.</i>	<i>Tons.</i>	<i>Cords.</i>
3	45,175	.....	51,693
4	.....	125,010	219 911
Total 7	45,175	125,010	271,604

It is to the purpose here to make mention of the new pulp and paper mill now being erected at Berlin by the Berlin Mills Company. The mill is expected to be in operation by June, 1904. Its daily capacity is reported to be 60 tons of sulphite fiber and 125 tons of ground wood pulp, to produce which will require over 225 cords of wood per day.

TABLE XXXI.—WOOD CONSUMED BY PULP MILLS IN NORTHERN NEW HAMPSHIRE, JULY 1, 1902, TO JUNE 30, 1903.

Source of supply.	Cords.	Per cent.
Northern New Hampshire.....	138,131	50.9
Canada.....	101,911	37.5
Maine.....	31,562	11.6
Total.....	271,604	100.0

According to Table XXX, there are apparently seven establishments, but as a matter of fact there are only six, since one establishment manufactures both kinds of pulp. From this table can be determined the amount of wood pulp produced by one cord of spruce and balsam (the latter not to exceed 10 per cent. of the total), which, in ground wood, is 1,752 pounds; in sulphite fiber, 1,137 pounds.

The interesting feature in Table XXXI is the large amount of wood which comes from Canada—37.5 per cent. of the total used in Northern New Hampshire. The twelfth census reports that of the Canadian wood of all kinds imported for pulp, which forms about one fifth of the entire supply of wood used for pulp in the United States, New Hampshire and New York together use two thirds.

During the last three years the increased use of wood for pulp by the pulp mills throughout the state has been enormous. This is shown in the following table, constructed from Tables XXVIII, XXIX and XXXI.



FIG. 1.—PULP AND PAPER MILL AND LOG POND. LINCOLN.

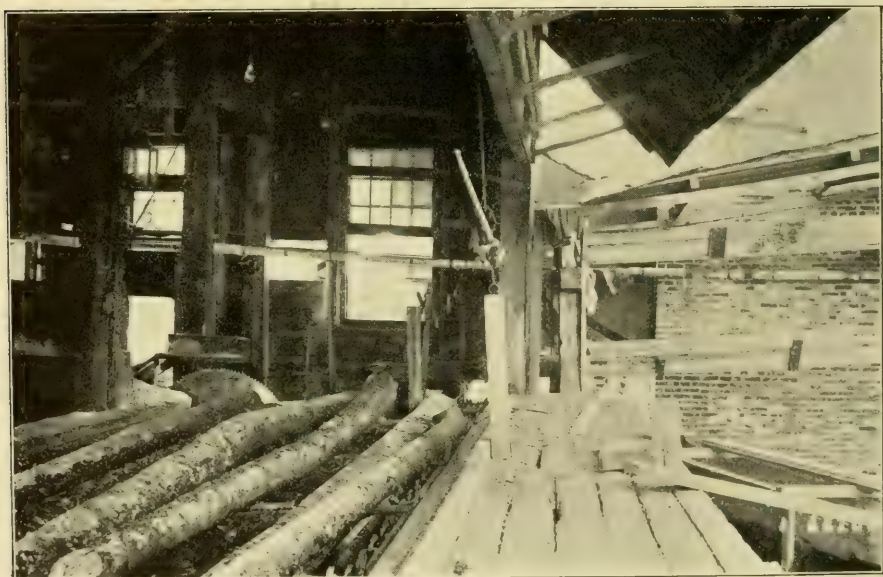


FIG. 2.—INTERIOR OF PULP BLOCKING MILL. LINCOLN.



FIG. 1.—SAWMILL AT LINCOLN.

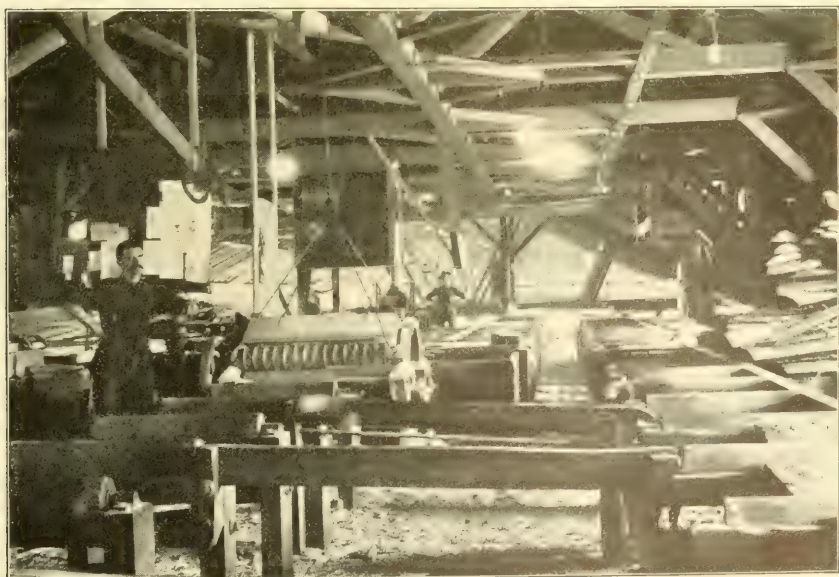


FIG. 2.—INTERIOR OF SAWMILL. LINCOLN.

TABLE XXXII.—DEMAND FOR PULP WOOD IN NEW HAMPSHIRE, 1900 AND 1903.

Source of supply.	1900.	1903.
	<i>Cords.</i>	<i>Cords.</i>
New Hampshire.....	109,761	163,035
Canada.....	87,139	101,911
Maine.....		31,562
Total	196,900	296,508

The paper mills in northern New Hampshire, included in four establishments, produced during the year ending June 30, 1903, 69,600 tons of paper. These mills use practically all of the ground wood pulp produced in the region, and a very small part, less than 15 per cent., of the sulphite fiber produced there. The bulk of the sulphite fiber goes to other New England paper mills. During the past year the paper mills in the section examined received a small part of their supply of pulp, amounting to about 15,000 tons, from foreign sources—Maine and Canada.

The chief product of the paper mills is newspaper, which finds a market in this country and abroad. A small part of the product includes manila, bag and wall paper.

The chief waste products are "screenings" and "sulphite liquor." Screenings consist of the unground and uncooked fibers which fail to pass through the screens in the pulp mills. For the most part this waste is used for fuel. Sulphite liquor is the waste liquor from the sulphite process, for which, according to an eminent authority, there has as yet been evolved no satisfactory application. In this region the liquor is neutralized and allowed to run off into nearby streams.

The combined holdings of timberland of pulp and paper mills in Northern New Hampshire are 488,290 acres. This acreage includes the great bulk of virgin timberland in the region. The policy of the paper companies, with a single exception, is to log their timber conservatively and hold the land for a second growth. That at times they fully

disregard conservative logging cannot be denied. That is, for the most part, determined by the situation of the timber, particularly on high, steep slopes, where danger from windfall precludes the hope of leaving even a fair percentage of the original stand. The owners are thoroughly alive to the importance and far-sightedness of a policy of perpetuating their supply of timber, and, as a means to this end, with a view to cutting as little as possible from their own land at present, they are getting a large part of their supply from farmers' woodlots and Canada. This statement with regard to Canada is substantiated by the figures in Table XXXI. An evil of no mean extent, caused indirectly by the paper companies looking for a supply from New Hampshire outside of their own holdings, is the complete and ruthless clearing of small holdings. The farmer is usually the sufferer, who, as a rule poor, will "skin" his land and ship the wood to a pulp mill for any reasonable price.

The question was asked the various pulp mill owners as to the length of time the present supply of spruce might be expected to last, and also as to the substitution of another species for pulp when the supply should have been exhausted. Their replies certainly indicate that they are not anticipating a spruce famine in the near future and that they will not worry over a substitute for spruce until the available supply of spruce in Canada is exhausted.

THE LUMBER INDUSTRY.

The relative position of New Hampshire among the various states as to capital invested and value of product in the lumber industry is respectively 19 and 25, according to the census of 1900. The census includes in the lumber industry its various auxiliary industries also, of which those represented in northern New Hampshire, such as the bobbin, the shoe-peg, etc., are separately described in this report, chiefly for the purpose of showing the relative amounts of wood consumed by each.

The state is completely overshadowed by the Lake states and such states as Pennsylvania, California and Washington. However, it is the most intensively lumbered, per acre of wooded area, of any of the states in the above table. The wooded area of New Hampshire in 1900 was estimated at 3,228,000 acres; the total amount of timber cut for lumber was 570,357,000 board feet; or 177 board feet per acre of wooded area. Wisconsin follows with 175 board feet per acre; Pennsylvania with 163; Ohio with 161; and so on down to Texas, with but 15 board feet cut per acre of wooded area. Obviously, these figures show fairly accurately the extent to which the lumber industry is using the forest resources of a state. From these figures, New Hampshire is certainly using hers at a rapid rate, but the important question is, how nearly the annual cut is offset by the growth in the forest and on cut-over land. Unfortunately no data exist for ascertaining this, but the opinion of many well-informed men in the state is that New Hampshire, as a whole, is producing more timber in yearly growth than is being cut out. Their opinion is based, and correctly, upon the very large number of abandoned fields throughout the state which, 40 to 50 years ago given entirely to agriculture, are now covered with dense and thrifty stands of timber. It may be well to add, however, that this condition of affairs is not so marked in northern New Hampshire as in the rest of the state.

The value of the lumber product in New Hampshire has multiplied nine times in the last half century and has nearly doubled in the decade 1890-1900, as shown in the table below. The decrease in the value of product between 1870 and 1880, and the general decline of the industry in this period, may be explained, in part, by the exodus of many eastern lumbermen to the pineries of the Lake states. An interesting feature of the table is the gradual decrease since 1870 in the number of establishments, which is chiefly due to the concentration of small holdings into a single ownership.

TABLE XXXIII.—THE LUMBER INDUSTRY OF NEW HAMPSHIRE.

[From the Twelfth Census.]

Year.	Number of establishments.	Capital.	Average number of wage earners.	Total wages.	Cost of materials used.*	Value of products.
1850	.....	.....	.....	.....	.....	\$1,099,492
1860	.....	.....	.....	.....	.....	1,208,629
1870	723	\$2,428,193	3,398	\$725,304	\$2,471,427	4,286,142
1880	680	3,745,790	3,104	548,556	2,272,991	3,842,012
1890	570	7,592,167	5,370	1,600,993	2,607,473	5,641,445
1900	553	11,382,114	4,188	1,654,965	4,927,399	9,218,310

* In 1890 and 1900, for purposes of comparison, "Cost of materials used" includes wages reported under the heads of "Logging" and "Cost of keep of animals."

The lumber industry in the region under consideration is represented at present by 65 sawmills, as shown below, varying in daily capacity from 3,000 to 140,000 board feet, and in yearly output from 25,000 to 42,000,000 board feet.

TABLE XXXIV.—SAWMILLS IN NORTHERN NEW HAMPSHIRE.

Mills with annual output of:	
Less than 100,000 board feet.....	8
100,000 to 500,000 board feet.....	27
500,000 to 1,000,000 board feet.....	9
1,000,000 to 5,000,000 board feet.....	16
5,000,000 to 10,000,000 board feet.....	3
25,000,000 board feet and over.....	2
Portable mills.....	8
Idle mills.....	7
Mills outside northern New Hampshire but supplied in part from it.....	5
Total.....	65

Coös county contains the greatest number of mills and produces the largest amount of lumber of the three counties in the district. Coös and Grafton contain the largest mills, the average output per mill in each county, for the year ending June 30, 1903, being about two and a half million board feet, while the average in Carroll was about one half million board feet, as shown in the following table. The mills of Coös cut the greatest amount of spruce and hardwoods; Grafton, hemlock; and Carroll, pine. The total

amount of spruce sawed is nearly three times the combined product of all other species. Mixed with spruce is balsam to the amount of about four per cent. Practically no mills separate balsam and spruce, the percentage of balsam varying, according to the location of the particular mill, from one to 20 per cent. The mills of Coös saw by far the largest percentage of balsam.

TABLE XXXV.—OUTPUT OF THE SAWMILLS OF NORTHERN NEW HAMPSHIRE, JULY 1, 1902, TO JUNE 30, 1903.

County.	Number of establishments.	Output—1,000 board feet.					Number of shingles.
		Total.	Spruce.	White pine.	Hemlock.	Hardwoods.	
Coös.....	25	67,300	55,300	4,320	1,825	5,855	9,125,000
Grafton	21	52,965	42,220	3,588	3,289	3,868	1,210,000
Carroll.....	19	11,370	665	8,220	1,220	1,265	2,065,000
Total....	65	131,635	98,185	16,128	6,334	10,988	12,400,000

A very small part of the supply of the mills contained in the above table comes from a source outside of this region, as shown below.

TABLE XXXVI.—LUMBER FROM OUTSIDE SOURCES SAWED IN NORTHERN NEW HAMPSHIRE.

Spruce.....	2,300,000	board feet.
White pine.....	1,025,000	"
Hemlock.....	200,000	"
Hardwoods.....	375,000	"
Total.....	3,900,000	"

Practically all the above comes from Vermont and goes to mills in Coös county. A large amount of the timber cut in northern New Hampshire goes to outside mills, as shown below.

TABLE XXXVII.—TIMBER CUT FOR LUMBER IN NORTHERN NEW HAMPSHIRE.

Mills.	Per cent.	Total.	Spruce.	White pine.	Hemlock.	Hard-woods.
		<i>1,000 board feet.</i>	<i>1,000 board feet.</i>	<i>1,000 board feet.</i>	<i>1,000 board feet.</i>	<i>1,000 board feet.</i>
Within northern New Hampshire.....	82.1	127,735	95,885	15,103	6,134	10,613
Outside northern New Hampshire....	17.9	27,835	24,310	2,110	545	870
Total.....	100.0	155,570	120,195	17,213	6,679	11,483

Of the 65 mills in this region, 52 manufacture spruce lumber; 40 manufacture pine; 35, hemlock; and 39 hardwoods. Logs are transported to three mills by drive, to eight mills by railroad, to 54 mills by team.

The bulk of the logs are scaled by the Blodgett or New Hampshire Rule, a caliper rule. Fifty-three mills use this rule; six use the Bangor Rule; four, the Scribner Rule; one scales by the stacked cord and one relies only on the mill survey. Blodgett's is the legal rule of the state. It is based upon a stick of timber 16 inches in diameter and 12 inches in length, which, by the statutes of the state, is made equivalent to one cubic foot, 100 cubic feet being equivalent to 1,000 board feet. As a matter of fact, however, 115 cubic feet are allowed per 1,000 board feet, though in large operations this must be specified in the contract. The consensus of opinion is that Blodgett's is a very fair rule, fair alike for buyer and seller; that while the actual amount of lumber sawed from large logs will overrun the scale, that from small logs will fall short of the scale, the one case offsetting the other. For the most part, the log constitutes the full length of the tree, taken to six inches at the top, and is scaled according to its middle diameter.

Ninety per cent. of the mills using spruce manufacture dimension timber and this is the chief product of the lumber industry. Practically all goes to Boston, where the bulk sold in 1903 at \$19 per 1,000 board feet, which includes

a freight rate of \$2 to \$3 per thousand. Hemlock is manufactured chiefly into dimension stuff; pine, mostly second growth, into rough lumber for box-boards, and hardwoods into flooring. Practically all the lumber is air dried. Of the 65 mills, 25, or about 40 per cent., manufacture shingles, chiefly pine, spruce, hemlock and balsam. Comparatively few mills do any custom sawing, the average charge for which, per 1,000 board feet, is, for softwoods, \$2.75; for hardwoods, \$3.25.

With few exceptions, the mills are of an old, unimproved type, exhibiting a general lack of time and labor-saving devices. Within the past ten years only five mills have seen fit to install any modern machinery. Thirty-five are operated by steam power, 30 by water power. The length of time each runs varies from one to two months in the spring to the full year. Only seven mills operate during the entire twelve months; more than 50 per cent. of the mills, less than six months.

A matter of comparatively recent importance to the White Mountain lumber mill, at least, is the utilization of waste products. Formerly what was in excess over that used for fuel by the steam mills was conveyed to a waste pile and burned. Now, however, the greater part of this, which is made up of edgings, trimmings, etc., is sold per cord locally or shipped even as far as Boston. At the mills it brings now \$1.50 to \$1.75 per cord. One large company, which operates both a lumber and a pulp mill, has ceased manufacturing laths, now using the entire barked slab for pulpwood. Sawdust, if used at all, is used chiefly as fuel, but, by many of the water mills which have no way of utilizing it, it is allowed to float down the stream.

Thirty-four mills own timberland, in the aggregate about 380,000 acres, over 259,000 acres of which is included also in the acreage of timberland owned by pulp and paper companies. Of the above 34 mills, 17, or 50 per cent., lumber conservatively. This consists chiefly in cutting under a simple selective system, taking out trees from eight

to 12 inches and over in diameter, except on steep slopes, which are cut clean; for, owing to danger from wind, etc., if enough of the stand is cut to make the operation pay, all might as well be cut. Of these 17 mills, 12 will hold their land indefinitely for future cuttings; five will sell after having cut their land so as to leave at least a salable stand. Fortunately for the region, the portable sawmills are in a very small minority. Here, as elsewhere, the average portable mill moves from woodlot to woodlot, making a clean sweep in practically every case. Its proximity to the supply and in consequence the relatively low cost of hauling the supply to the mill, are the chief factors in making this profitable.

The tax rate on timberlands is generally low, and has practically no bearing upon conservative lumbering.

As for any precaution against fire in the dry season, only five, or less than 15 per cent. of the 34 mills owning timberland, seem to think it worth while. The land of these five mills is traversed or skirted by some railroad which makes every precaution imperative. One of the chief arguments against conservative lumbering is the liability of cut-over land to fire. Lumbermen argue, Why not cut everything now, since it is only a matter of time when fire will run over the land and burn what remains? In not a few cases last spring, when fire ran over thousands of acres in the mountains, this argument was substantiated. On the whole, however, there is a general willingness among timberland owners to stand a reasonable part of the outlay for any efficient fire system by either the state or the town, and a desire to see such a system put in operation.

The demand for softwood saw logs is far in excess of the supply, the decrease in which is reflected in the general lack of improvement in the sawmills. The greatly diminished supply of large spruce timber is fairly well shown by the decrease in the manufacture of clapboards. This class of lumber is made from four-foot butts, which must be at least 16 inches in diameter at the small end. In compara-



FIG. 1.—BLOCKING MILL FOR PULPWOOD BEFORE LOADING IT ON CARS.
MT. BOWMAN.

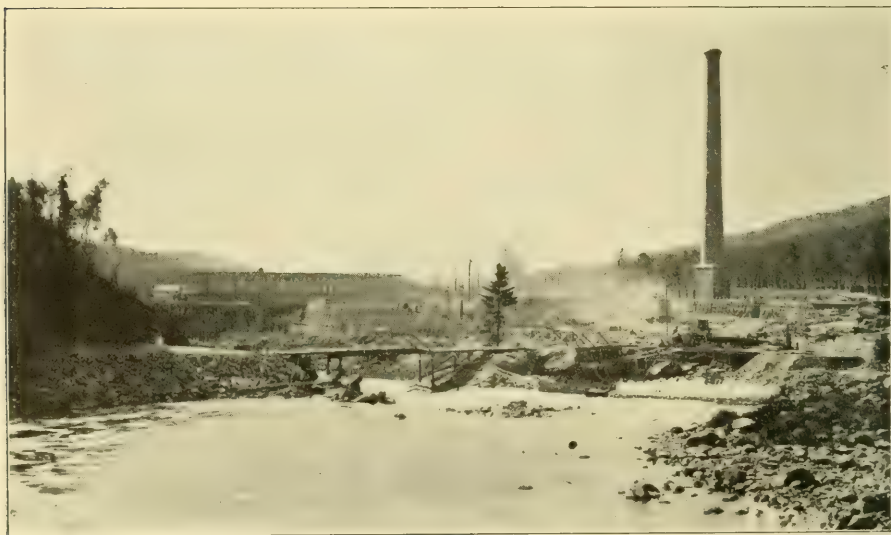


FIG. 2.—FOUNDATION OF THE NEW PAPER AND PULP MILL ON THE ANDROSCOGGIN RIVER BELOW BERLIN.



FIG. 1.—INTERIOR OF SAWMILL. BERLIN FALLS.



FIG. 2.—INTERIOR OF PAPER MILL. LINCOLN.

tively recent years nearly every mill in the region made clapboards; now only nine mills of the 65 make them. It is perfectly clear that the increased use of spruce for pulp is influential nowadays in decreasing the available spruce for lumber. The growing tendency on the part of lumbermen is to sell out their entire land holdings to pulp companies.

THE BOBBIN INDUSTRY.

The bobbin industry in northern New Hampshire is represented by nine mills, requiring a total of 10,845 cords of wood to produce about 47 million bobbins, speeders, quills and rolls, all of which are included under the single head of bobbins. The manufactured product is rough bobbins, as distinguished from the final product subsequently turned out by the various finishing mills. There is no mill in the region which produces the finished bobbin. The species used are paper birch, yellow birch, sugar maple, beech and gray birch.

TABLE XXXVIII.—THE BOBBIN INDUSTRY OF NORTHERN NEW HAMPSHIRE, JULY 1, 1902, TO JUNE 30, 1903.

Number of establishments.....	9.
Average period of operation.....	9 months.
Total output.....	46,975,000 bobbins.
Wood consumed in producing output.....	10,845 cords.
Average price per cord, delivered at mill.....	\$6.15.

Of the 10,845 cords consumed in this industry for the year ending June 30, 1903, 700 came from Canada and 500 from Vermont and from New Hampshire outside of the region considered by this report. Of the nine mills listed but two own timberland, the total acreage of which is estimated at 25,000 acres. In each case it is the intention of the owner to hold the land indefinitely for a second cutting. Cordwood sticks for bobbins must be at least five inches, and for some buyers six inches, in diameter at the small end, which ordinarily means the removal of trees with a stem not less than five or six inches at the top.

Paper and yellow birch and sugar maple are used indiscriminately in the manufacture of bobbins. A large amount of beech is run into speeders chiefly, and gray birch is used to a very limited extent, since it is accepted by only one mill. The maximum price paid for bobbin wood during the past year was \$8 per cord for extra quality paper birch logs with a minimum diameter of nine inches at the top end.

The bulk of bobbin wood is scaled, per cord, in the log by the Fabian Caliper Rule. This rule is based upon a log 12 feet long with a middle diameter of 12 inches, yielding 12 cubic feet, 128 cubic feet being allowed to the cord. The Blodgett and Bangor Rules are also used.

The bulk of the product of these mills goes to the U. S. Bobbin & Shuttle Company of Providence, Rhode Island, from which point it is distributed to their various finishing mills.

THE SHOE PEG INDUSTRY.

But three peg mills are operating within the area included by this report, all located in the southern part of the region. Paper birch and yellow birch are the species used.

TABLE XXXIX.—THE SHOE-PEG INDUSTRY OF NORTHERN NEW HAMPSHIRE, JULY 1, 1902, TO JUNE 30, 1903.

Number of establishments.....	3.
Average period of operation.....	10.5 months.
Total output of pegs.....	175,300 bushels.
Wood consumed in producing output....	3,506 cords.
Average price per cord, delivered at mill.....	\$8.71.

A comparison of the total output and the total number of cords consumed shows that one cord will produce on the average 50 bushels of pegs. Of the two species used, paper birch forms at least 85 per cent., from the highest quality of which the best pegs are manufactured. Yellow birch here is the so-called silver birch, or second-growth yellow birch, which contains a minimum amount of heart-wood.

Besides the total number of cords given in the above table, as used by the mills of northern New Hampshire, 450 cords go to outside mills, making the total cut of peg wood in the region 3,956 cords.

Pegwood is bought by the stacked cord, usually in four-foot lengths, the following specifications being strictly adhered to:

Must be straight and free from knots, bunches, black streak and dead wood.

Must be not less than six, or, as in the case of one mill, seven inches in diameter at the smallest place.

Redheart to be not over one-third of the diameter, and in the center of the stick.

Heartwood is entirely discarded and forms the bulk of the waste. Owing to the non-availability of pegwood, due rather to the unwillingness of neighboring timberland owners to cut, than to the scarcity of the species, it has become necessary for at least two of the mills to suspend operations, in some instances for several months at a time.

The chief market for the product of these mills is Europe, Germany being the principal distributing point.

THE CRUTCH INDUSTRY.

The crutch industry in this region is represented by four mills, all in the township of Rumney. The species used are sugar maple, yellow birch and paper birch

TABLE XL.—THE CRUTCH INDUSTRY OF NORTHERN NEW HAMPSHIRE, JULY 1, 1902, TO JUNE 30, 1903.

Number of establishments	4.
Average period of operation.....	12 months.
Total output of crutches.....	6,400 dozen pairs.
Wood consumed in producing output.....	150,000 board feet.
Average price per 1,000 board feet, delivered at mill.....	\$11.97.

The above table shows that 150,000 board feet will produce 6,400 dozen pairs of crutches, which is about 43 dozen

pairs to the 1,000 board feet. In addition to the indigenous species used in this industry, two tropical hardwoods, rosewood and lancewood, are used, though to a very limited extent. The best crutches are made from the highest grade of sugar maple.

The crutches manufactured at these mills find a market in all parts of the United States, from the Atlantic to the Pacific. A limited number go to Canada and Germany.

MISCELLANEOUS INDUSTRIES.

These industries include the manufacture of excelsior, spools, rakes, handles, chairs, racket frames, picket stakes, wood shanks, veneer and ladder rounds. The species used are popple, paper and yellow birch, white ash, sugar and red maple, beech, red oak, balsam and basswood.

TABLE XLI.—THE MISCELLANEOUS INDUSTRIES OF
NORTHERN NEW HAMPSHIRE, JULY 1, 1902, TO
JUNE 30, 1903.

Number of establishments.....	9.
Average period of operation.....	10.7 months.
Wood consumed:	
Board feet.....	483,000.
Cords.....	2,650.

The stock for excelsior, spools, wood shanks and veneer is bought by the cord. The total number of cords consumed is 2,650, as shown above, which equals approximately 2,060,000 board feet. This, added to the number of board feet consumed in the manufacture of chairs, rakes, etc., makes a total of about two and a half million board feet used by miscellaneous industries, more than 50 per cent. of which is manufactured into excelsior.

CONCLUSIONS AND RECOMMENDATIONS.

The study made by the Bureau of Forestry shows conclusively that the forest plays a most important part in northern New Hampshire, and that a definite change in present policy and methods is necessary. Northern New Hampshire contains large areas of land, valueless for other purposes, upon which a forest of some kind will continue to grow even under the most careless methods, but the highest value of these lands can be realized only under conservative forest management.

It is estimated that visitors to the mountains leave annually in New Hampshire approximately eight million dollars, or about one half of the value of the total annual lumber production of the state. It is true that lumbering does not permanently affect the attractiveness of the mountain region as a summer resort, since cut-over lands, if protected from fire, soon become almost as attractive to the eye as virgin forest. But the very existence of the region as a summer resort depends directly upon the protection of the forest from fire, which absolutely destroys the beauty of the landscape. Conservative lumbering will also show a decided advantage over present methods in preserving natural forest conditions. The virgin forest still remaining in the White Mountains is practically confined to two localities: one, the northern slope of the Presidential Range, and the other that of Waterville. Clear cutting of this virgin growth will undoubtedly result in the slackening of the summer trade for a time in these localities, and it would appear to be to the interest of the state that they should be preserved intact, or at least lumbered conservatively.

Forest Fires.—At present fires are the greatest danger threatening the forests of New Hampshire and their dependent industries. The fact that the land burned has for the most part been cut over decreases but little the actual damage done. The area burned over in 1903 was 84,255

acres. Legislation for the organization of an adequate fire service and active and faithful work on the ground are absolutely necessary before forest fires in New Hampshire can be stopped.

It is strongly recommended that the governor be given power to appoint a state forester. The state forester should be a professional forester and should act as chief fire warden. The governor should also be given power to appoint the necessary district fire wardens. The state forester should receive a suitable annual salary and all actual and necessary living and traveling expenses while in the field. The district fire wardens should receive a monthly salary and all actual and necessary living and traveling expenses while in the field during periods in which there is danger from forest fires, but should hold office throughout the year. It should be the duty of the state forester to divide into districts that portion of the state in need of protection from forest fires and to recommend for appointment by the governor a district fire warden to take charge of each district, and the removal of district fire wardens not satisfactorily fulfilling their duties. During seasons of danger the state forester should inspect the work of the district fire wardens on the ground. He should prepare and furnish to the district fire wardens fire notices to be posted along all roads and trails in the forest. He should be given power to designate areas upon which, between April 15 and June 10, camping or fishing would not be permitted without a written permit from the district fire warden. He should approve for payment all accounts for salary, expenses and the employment of labor, rendered by district fire wardens.

The district wardens should report to the state forester, should have the power to arrest without warrant for violation of the law and should be authorized to call out for fire patrol or fire fighting any able-bodied male resident of the district in which fire occurs or which is threatened by fire. The district wardens should issue permits for the burning

of brush, prohibited except under permits, and for camping or fishing on wild land between April 15 and June 10, and, subject to the approval of the forester, should organize fire patrols whenever necessary within their districts. They should see that their districts are properly provided with fire notices and should secure evidence in case of fire. It should be their duty to see that fires are actually prevented, not merely to report them, and their retention in office should be determined by their efficiency in accomplishing this. Men employed to patrol a district or fight fire should be paid by the hour. Delay in making these payments should be carefully avoided.

Conservative Lumbering.—There are approximately 1,684,000 acres of forest land in the region examined, of which only 200,000 are virgin forest. The northern half of the state contains about 4,760 million feet board measure of softwoods. The lumbering now going on in northern New Hampshire is chiefly by large pulp and lumber companies who intend to hold their lands for a second crop. To this end, both a definite forest policy and the application of conservative methods in lumbering are necessary. The employment of trained foresters by these large companies is highly desirable. They should make the study on the ground necessary to determine the best methods of conservative lumbering and they should put those methods into effect. It should be clearly understood that no general instructions can be given which will cover the varying forest problems. The details must be worked out on the ground. The principal sources of waste at present are in cutting high stumps, in leaving good lumber in the tops, in leaving logs and lodged trees in the woods, in the failure to utilize wind-thrown and dead timber which is still merchantable, in leaving standing merchantable trees which are sure to be wind-thrown, in the failure to leave seed trees in favorable localities and in the lack of protection of young growth in lumbering operations.

A considerable area of the state is occupied by farm

woodlots. Many small mill owners draw their timber from second-growth woodlots and there is a growing movement on the part of lumbermen toward the purchase of tracts of second growth. These woodlots offer for the most part an excellent opportunity for the practice of forestry with profit. A thrifty woodlot is a most valuable adjunct to the farm. The labor required to keep it in good condition involves no further outlay than a few days' work each year. The returns in firewood, fence posts and material for other uses pay many times the cost of growing it.

Forest Planting.—Forest planting upon wholly denuded lands or to supplement incomplete natural reproduction is already profitable in New Hampshire, when land can be protected from fire. The best species for planting are white pine, Norway pine and Norway spruce. The white and Norway pine are adapted to the sandy soils, the Norway spruce to the loamy soils. The latter is preferable to the red spruce because it grows more rapidly, makes a larger tree and yields the same quality of timber. At least 1,200 trees should be planted to the acre, which makes a spacing of about six feet each way. The cost of planting per acre, including cost of plants, should not exceed eight dollars, when the plants are grown from seed or purchased at cost.

It is recommended that the state establish and maintain a forest nursery under the direction of the state forester, and distribute seedlings and forest tree seeds at cost to farmers and others who may desire to plant. By offering encouragement in this way large areas of waste land suitable only for forest can be rendered productive.

A Forest Reserve.—Cut-over lands in the mountain region should be acquired for reserve purposes without delay. This is a measure of great importance. Such land can at present be bought for from \$1 to \$3 per acre and its value under efficient fire protection will increase rapidly. Its purchase is a better business venture than that of virgin timberland under present prices, in view of the possibility

of waiting a comparatively long time for returns under public ownership.

A State Forester.—As recommended, the state chief fire warden should be a trained forester. It should be his duty to establish and maintain a state forest nursery for the distribution, at cost, of plants and seeds to farmers and lumbermen, to assist landowners in forest planting and in the conservative management of their forest lands, to lecture at public meetings and to publish and circulate information regarding state forest lands and forest problems.

SHRUBS AND SMALL TREES IN NORTHERN NEW HAMPSHIRE.

Striped maple.....	<i>Acer pennsylvanicum.</i>
Mountain maple.....	<i>Acer spicatum.</i>
Speckled alder.....	<i>Alnus incana.</i>
Mountain alder.....	<i>Alnus alnobetula.</i>
Juneberry	<i>Amelanchier canadensis.</i>
Shadbush	<i>Amelanchier botryapium.</i>
Oblong fruited juneberry....	<i>Amelanchier oligocarpa.</i>
Red chokeberry.....	<i>Aronia arbutifolia.</i>
Black chokeberry.....	<i>Aronia nigra.</i>
Swamp pink.....	<i>Azalea viscosa.</i>
Scrub birch.....	<i>Betula grandulosa.</i>
Scrub paper birch.....	<i>Betula papyrifera minor.</i>
Moss plant (Alpine).....	<i>Cassiope hypnoides.</i>
Alpine azalea.....	<i>Chamaecistus procumbens.</i>
Leather leaf.....	<i>Chamaedaphne calyculata.</i>
Creeping snowberry.....	<i>Chiogenes hispidula.</i>
Sweet fern.....	<i>Comptonia peregrina.</i>
Round-leaved dogwood.....	<i>Cornus circinata.</i>
Silky cornel.....	<i>Cornus amomum.</i>
Red-osier dogwood.....	<i>Cornus stolonifera.</i>
Alternate-leaved dogwood....	<i>Cornus alternifolia.</i>
Scarlet haw.....	<i>Crataegus coccinea.</i>
Diapensia (Alpine).....	<i>Diapensia lapponica.</i>
Bush honeysuckle.....	<i>Diervilla diervilla.</i>
Creeping wintergreen.....	<i>Gaultheria procumbens.</i>

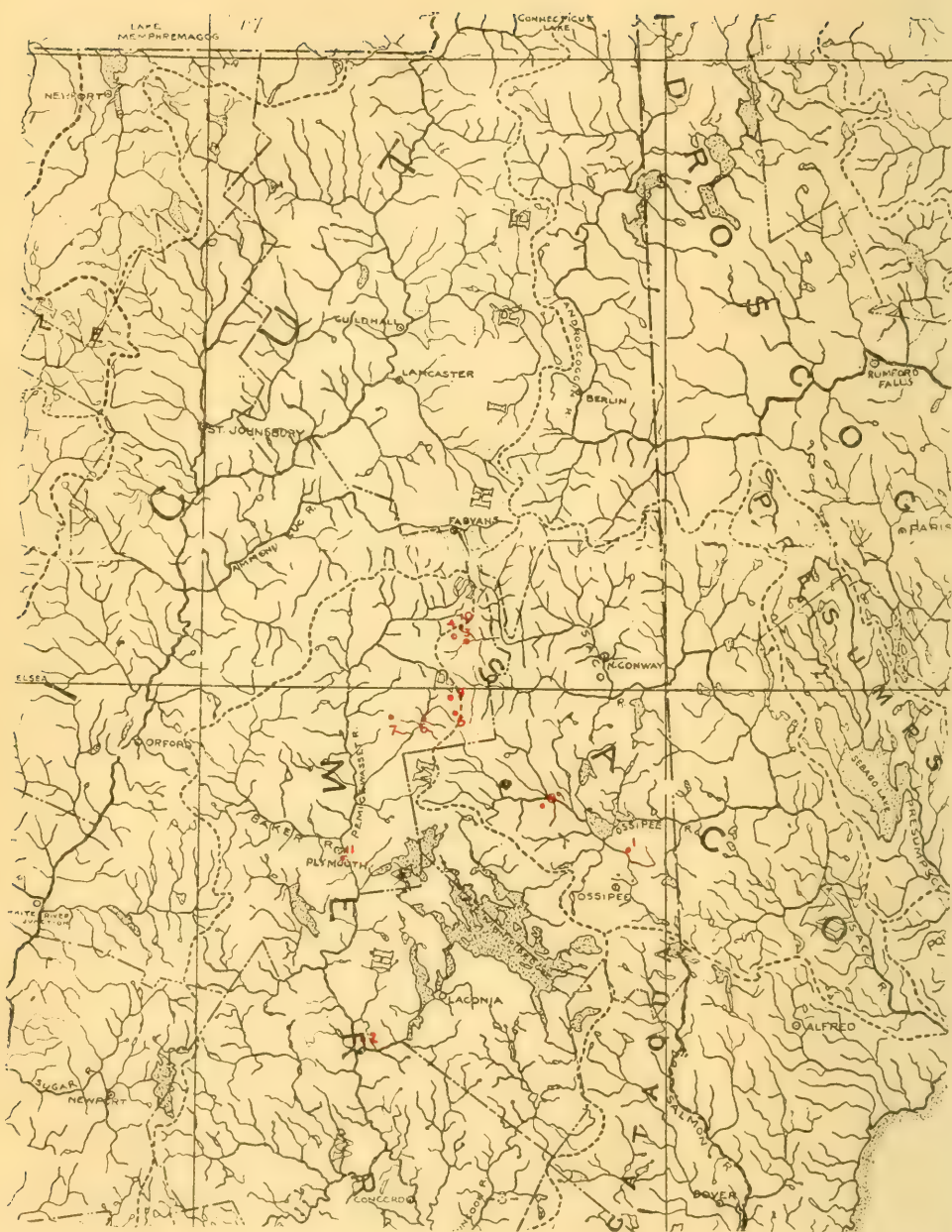
Witch hazel.....	<i>Hamamelis virginiana.</i>
Common juniper.....	<i>Juniperus communis.</i>
Swamp laurel.....	<i>Kalmia glauca.</i>
Sheep laurel.....	<i>Kalmia angustifolia.</i>
Labrador tea.....	<i>Ledum groenlandicum.</i>
American fly honeysuckle....	<i>Lonicera ciliata.</i>
Sweet gale.....	<i>Myrica gale.</i>
Mountain holly.....	<i>Nemopanthes fascicularis.</i>
Ironwood	<i>Ostrya virginiana.</i>
Mountain heath.....	<i>Phyllodoce coerulea.</i>
Choke cherry.....	<i>Prunus virginiana.</i>
Mountain ash.....	<i>Pyrus americana.</i>
Scrub oak.....	<i>Quercus nana.</i>
Rhodora	<i>Rhodora canadensis.</i>
Lapland rose bay.....	<i>Rhododendron lapponicum.</i>
Staghorn sumach.....	<i>Rhus hirta.</i>
Dwarf sumach.....	<i>Rhus copallina.</i>
Poison sumach.....	<i>Rhus vernix.</i>
Swamp gooseberry.....	<i>Ribes lacustre.</i>
Fetid currant.....	<i>Ribes prostratum.</i>
Northern gooseberry.....	<i>Ribes oxycanthoides.</i>
Sweetbrier	<i>Rosa rubiginosa.</i>
Northeastern rose.....	<i>Rosa nitida.</i>
Purple flowering raspberry..	<i>Rubus odoratus.</i>
Dwarf raspberry.....	<i>Rubus triflorus.</i>
Red raspberry.....	<i>Rubus strigosus.</i>
Highbush blackberry.....	<i>Rubus villosus.</i>
Millspaugh's blackberry....	<i>Rubus millspaughii.</i>
Running swamp blackberry..	<i>Rubus hispidus.</i>
Bebb's willow.....	<i>Salix bebbiana.</i>
Crack willow.....	<i>Salix fragilis.</i>
Silver willow.....	<i>Salix argyrocarpa.</i>
Balsam willow.....	<i>Salix balsamifera.</i>
Shining willow.....	<i>Salix lucida.</i>
Bearberry willow.....	<i>Salix uva-ursi.</i>
Tea-leaved willow.....	<i>Salix phylicifolia.</i>
American elder.....	<i>Sambucus canadensis.</i>
Red-berried elder.....	<i>Sambucus pubens.</i>
Meadow sweet.....	<i>Spiraea salicifolia.</i>
Steeple bush.....	<i>Spiraea tomentosa.</i>
American yew (ground hem- lock)	<i>Taxus minor.</i>
Dwarf blueberry.....	<i>Vaccinium pennsylvanicum var. an- gustifolium.</i>

Canada blueberry.....	<i>Vaccinium canadense.</i>
Dwarf bildberry.....	<i>Vaccinium caespitosum.</i>
Mountain cranberry.....	<i>Vaccinium vitis-idaea.</i>
Low blueberry.....	<i>Vaccinium vacillans.</i>
Great bildberry.....	<i>Vaccinium uliginosum.</i>
Hobble bush.....	<i>Viburnum alnifolium.</i>
Withe-rod	<i>Viburnum cassinoides.</i>
Maple-leaved arrow-wood....	<i>Viburnum acerifolium.</i>
Few-flowered cranberry tree.	<i>Viburnum pauciflorum.</i>
Northern fox grape.....	<i>Vitis labrusca.</i>
Riverside grape.....	<i>Vitis vulpina.</i>
Summer grape.....	<i>Vitis aestivalis.</i>
Privet andromeda.....	<i>Xolisma ligustrina.</i>

HYDROGRAPHY OF THE WHITE MOUNTAIN REGION.

BY

N. C. GROVER AND H. K. BARROWS.



HYDROGRAPHY OF THE WHITE MOUNTAIN REGION.

The principal interest in the hydrography of the White Mountain region arises from the fact that it is a collecting basin for four large rivers of New England, viz., Connecticut, Merrimack, Saco and Androscoggin, all of which are extensively used for water power. The brooks and small rivers, which drain this mountainous district, are not of sufficient size to be in themselves of great importance for power purposes, although a few small lumber mills have been and are still located on their banks. Their slopes are invariably steep and many excellent sites for dams are available, but the small amount of water flowing at low stages, together with the considerable distance to large cities, render them of comparatively little value.

Their principal importance arises then from their effect on the flow of the large rivers to which they are tributary, and the value of these larger rivers to the several states of New England depends on the maintenance of their waters in undiminished quantities.

Androscoggin and Merrimack Rivers stand out preëminently as water power streams, being of medium size and having their great fall concentrated at a few localities where in the natural development of the country manufacturing towns of importance have been built. The Rangeley Lakes in the upper basin of the Androscoggin serve as natural regulators of its flow. On these lakes the storage of freshet waters has been largely increased by the construction of dams; and the release of these waters during periods of drought serves to increase the low water flow of the river

to a quantity far above the natural amount. Likewise, Winnepesaukee Lake, on which the natural control of surplus waters has also been largely increased by dams, serves as a regulator of the flow of the Merrimack. These storage basins are not, however, so located that they completely regulate the freshet flows from their respective river basins. The water runs from large areas without other control than that offered by nature. Moreover, Saco and Connecticut Rivers have no extensive lake surfaces within their basins and consequently no great amount of artificial storage has been used to control freshet and augment low water flow.

There is a well founded popular belief that forests act naturally as great regulators of rivers, and one has only to observe and compare conditions within and without their borders in springtime to convince himself that their influence on snow storage and consequently on spring freshets is very material. The magnitude of this effect and its value as a regulator of flow of streams as well as the effect of forests on the control of water, which falls as rain, is still uncertain.

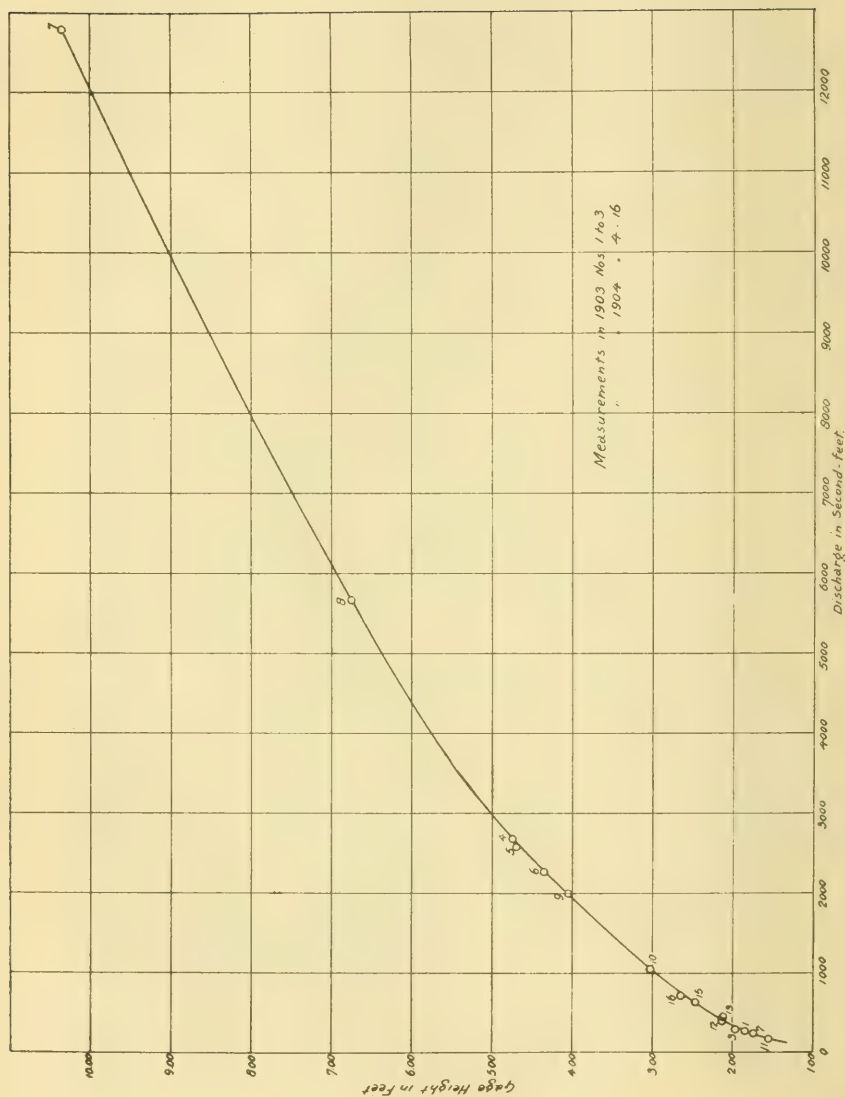
Under these conditions and with large interests at stake on the several rivers, the last state Legislature made a special appropriation for the investigations of forest conditions in New Hampshire and the United States Geological Survey has been asked to assist by studying the effect of deforestation upon the streams. In making this investigation the method for determining the daily flow of the rivers has been that usually followed by the Survey and which is outlined below. A gage for observing the stage of the river is established at a bridge or other place where the record of flow is to be made. This gage is a vertical staff or some device by which the height of water may be observed and is read, usually twice each day, by a person living near by. The average of the gage readings in any day is used as the mean gage height for that day.

At various stages of the river the station is visited by one of the hydrographers of the Survey, who measures the

amount of water flowing by means of a current meter, which is primarily an instrument for measuring the velocity of moving water. The essential part of this meter is a wheel with vanes, which may be shaped like those of a windmill or a screw or with cups like those of an anemometer, the necessary qualification being that moving water shall readily cause the wheel of the meter to turn. The type generally used by the U. S. Geological Survey is known as the Price meter and is described in detail in *Water Supply and Irrigation*, Paper No. 94, published by the U. S. Geological Survey. Each meter has been rated before use. This is done by moving it through still water at various observed speeds to determine the relation between the velocity with which the meter moves through the water and the revolutions of the wheel. This relation having been determined, the meter is used in running water, the revolutions per unit of time noted and the velocity of water computed.

At the time that observations for velocity are made with the meter, soundings are taken and from these the area of cross section of each portion of the water is computed; each partial area multiplied by the velocity observed in that area gives a partial discharge. The sum of the partial discharges gives the total discharge for the stream.

Measurements of flow are made, as stated above, at various stages of the river. When several measurements, covering a considerable range of gage height, have been made, they are plotted on co-ordinate paper with gage heights for ordinates and discharges for abscissas, and a smooth curve, called the rating curve, is drawn through the several points. The curve so constructed for the station on Pemigewasset River at Plymouth, New Hampshire, is shown on Plate I.



Rating Curve
 Pemigewasset River at Plymouth NH

From the rating curve for any station is made its rating table, which gives the discharge for any gage height. The rating table for the curve shown in Plate I is given on page 174. The use of the rating curve and its corresponding rating table is based on the assumption that for any given gage height the quantity of water flowing past the gage is always the same. As long as conditions above and below the gage for some distance, and at the gage, remain substantially constant, this assumption will be a correct one. This means, then, that the river bed and banks must be of a permanent nature—rocky or of firm gravel—in order that at times of floods, when the current is very swift, there will not be changes of any consequence in the width, depth and character of the channel. During the winter, when, in this latitude, the rivers are frozen over for several months, the conditions of flow are different from those in summer; consequently the regular rating curve cannot be used but a new curve must be developed by means of current meter measurements made through holes cut in the ice. No ice measurements of this kind have been made at any of the White Mountain gaging stations as yet, although the reading of gage heights at these stations has been continued through the winter.

From the record of daily gage heights and the rating table for any station, estimates of the mean daily discharge are made; and from these estimates the table of mean monthly discharge and other dependent data is determined. This latter table gives in condensed form a summary of the results obtained from the observations made during the year at the station. In order to explain this table the following definitions are given:

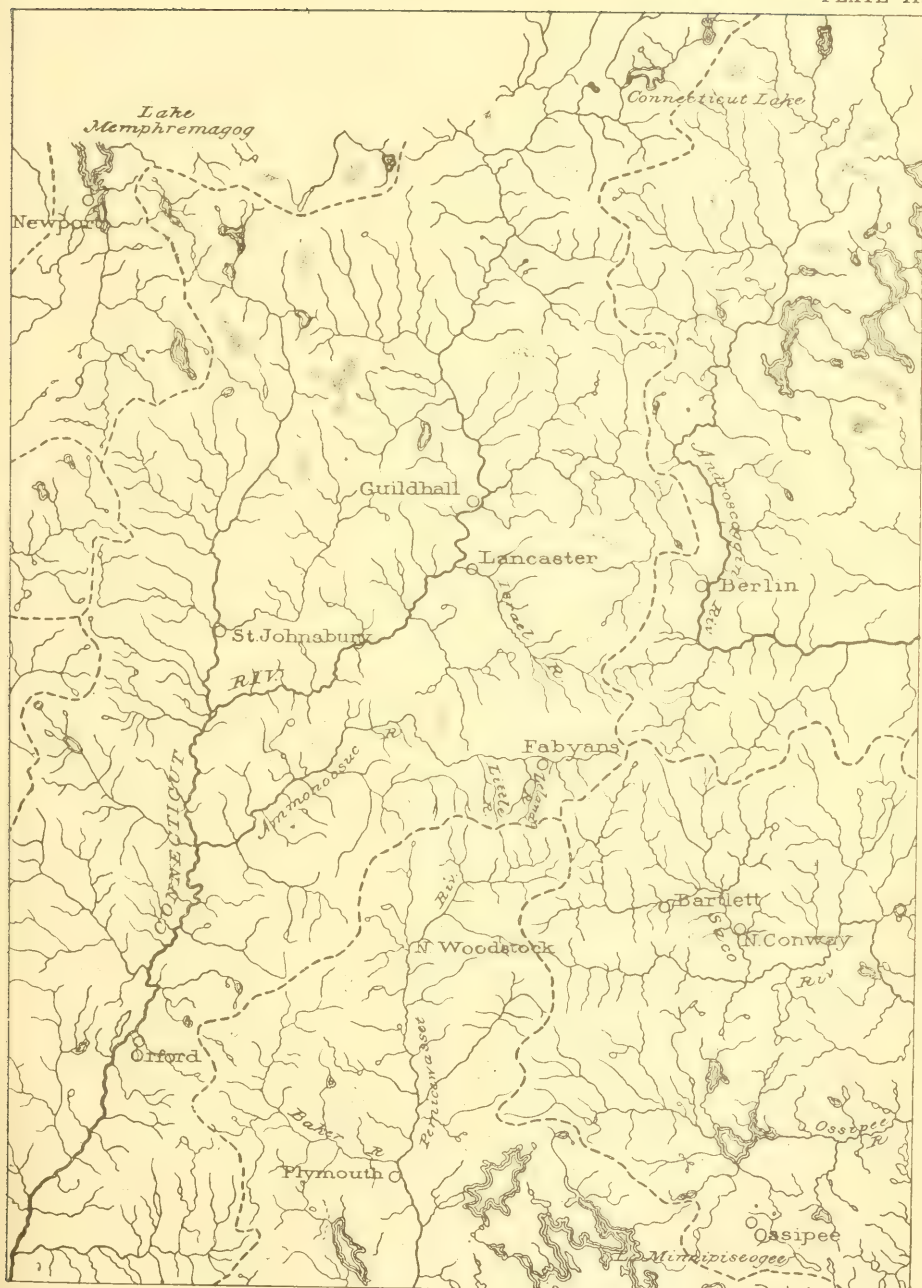
The term “second-feet” (Sec.-ft.) is an abbreviation for “Cubic feet per second.” It is the number of cubic feet of water flowing by the gaging station every second. The column headed “Maximum” gives the mean flow for the day when the mean gage height was the highest and it is the flow as given in the rating table for that mean gage height. As the gage height is the mean for the day, there

might have been short periods when the water was higher and the corresponding discharge larger than given in this column. Likewise in the column of "Minimum" the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow for each second during the month. Upon this the computations for the three remaining columns in the table are based. The expression "second feet per square mile" means the number of cubic feet of water flowing each second from every square mile of drainage area. "Depth in inches" means the depth of water in inches that would have covered the drainage area, uniformly distributed, if all the water could have accumulated on the surface. This quantity is used for comparing run-off with rainfall, which quantity is usually given in depth in inches.

In making a study of the hydrography of this region, with special attention to the effect of deforestation upon stream flow, the short time available has been a serious handicap. In order to draw definite conclusions as to such effects, records should extend over several years, but it has been hoped that, by choosing with care our several gaging stations, some indications of effect on run-off could be observed by the end of the year. With these several conditions in view, river stations were established at the following places:

1. Saco River at Conway Center.
2. Pemigewasset River at Plymouth.
3. Israel (above South Branch) River at Randolph.
4. Israel (below South Branch) River at Jefferson Highlands.
5. Ammonoosuc River at Bretton Woods.
6. Zealand River at Twin Mountain.
7. Little River at Twin Mountain.

Descriptions of these several stations, together with a statement of work done and results obtained at each, are given below. Their location is shown on Plate II.



As no rainfall records had been collected for this region (except for the stations on Mt. Washington and at Plymouth), rain gages were set and observations made at Bartlett, Bretton Woods, Jefferson Highlands and North Woodstock.

The river basins in the White Mountain region do not differ from each other materially in their topographic and geologic features. Granite prevails throughout the whole region and the topography is broken and rocky, with no considerable areas are composed of naked rock. The contour by narrow valleys, gradually change to the lower hills and broader valleys of the large river basins, and, as the slopes of all streams are great, there is little or no pondage or natural storage. The mountain summits are bare and considerable areas are composed of naked rock. The condition of vegetation and forest cover ranges from barren mountain tops to dense spruce growth. The natural conditions have been largely modified by the lumbermen and a great proportion of the total area has been cut over to some extent. From some sections the forest cover has been entirely stripped, while from others certain portions of the growth only have been removed. These conditions have been examined in detail and accurately reported by the Bureau of Forestry. In the table below is a concise statement of the forestation of each basin whose hydrography has been studied by the United States Geological Survey.

TABLE SHOWING FOREST CONDITIONS ON DRAINAGE AREAS.

Classification.*	Drainage.—Area.					
	Pemigewasset at Plymouth.	Israel (above South branch.)	Israel (below South branch.)	Ammonoosuc at Bretton Woods.	Zealand at mouth.	Little at mouth.
Soft Woods (evergreens).						
Over 2 M ft. per acre.....	25.4	27.3	21.8	51.3	13.2	21.5
Under 2 M ft. per acre.....	20.9	6.2	14.1	11.6	0.5	.....
Total.....	46.3	33.5	35.9	62.9	13.7	.....
Hard Woods (deciduous).....	9.7	37.5	29.6	6.1	2.4	20.1
Waste and barren land.....	9.3	18.0	12.3	15.2	2.7	13.7
Agricultural, clean cut and burns	13.4	11.0	22.2	15.8	81.2	42.6
Water.....	0.3	.....	.....	.....	.....	.....
Not classified	21.0	.....	.....	.....	.....	2.1
Total per cent.....	100.00	100.00	100.00	100.00	100.00	100.0

* Field work done by the Bureau of Forestry in 1903.

SACO RIVER DRAINAGE BASIN.

This river receives its headwaters from the valleys and slopes of the White Mountains at elevations of 4,000 to 5,000 feet. It drains an area of 1,720 square miles, of which 900 square miles lie in New Hampshire and the remainder in Maine. The slopes at the headwaters are very steep, with no lake storage. In Plate III are shown two typical views of this river. In the lower river are many good water powers, part of which are in use. The upper portions of the basin are generally in forest, but much of the large growth has been cut, and over large areas the evergreen trees have been entirely removed. In the lower basin are many farms and villages. The underlying rock is generally granite, appearing at the surface in many mountain summits.

SACO RIVER AT CENTER CONWAY, N. H.

This station, shown on Plate III, was established August 26, 1903, by N. C. Grover. It is located at the wooden highway bridge between Center Conway and Redstone and about two miles from either place. The drainage basin at this point has an area of 385 square miles. A standard chain gage is attached to the floor of the bridge; length of chain, 30.44 feet. It is referred to bench marks as follows: (1) Marked point on lower chord of bridge near gage, elevation 27.72 feet; (2) South end of top of west abutment, elevation, 25.14 feet. The channel is straight, 2,000 feet above and 300 feet below the station, is about 200 feet wide at ordinary stages, broken by one pier. The banks are high and are not liable to overflow, except in very extreme freshets. The bed is of sand and gravel and is permanent. Low water measurements are usually made by wading about 400 feet above the bridge. The gage is read twice daily by Albert P. Davidson.



SACO RIVER ABOVE GLEN.



GAGING STATION ON SACO RIVER, NEAR CONWAY CENTER.

LIST OF DISCHARGE MEASUREMENTS OF SACO RIVER, AT
CENTRE CONWAY, N. H.

No.	Date.	Hydrographer.	Width. Feet.	Area of sec. Sq. ft.	Mean veloc. Ft. per sec.	Gage height. Feet.	Dis- charge Sec.-ft.	Remarks.
1	1903 Aug. 26	H. K. Barrows.	167	429	1.18	4.31	504	.....
2	Aug. 27	H. K. Barrows.	277	294	1.30	4.13	382	By wad- ing.
3	Sept. 19	H. K. Barrows.	275	295	1.22	3.92	359	By wad- ing.
4	1904 April 19	N. C. Grover ..	227	738	2.20	5.87	1623	.....
5	May 2	S. K. Clapp	251	1477	3.88	9.00	5730	.....
6	May 13	S. K. Clapp	235	986	2.83	7.00	2786	.....
7	May 26	N. C. Grover ..	224	740	2.12	5.76	1567	.....
8	June 14	S. K. Clapp	144	417	1.17	4.11	488	.....
9	July 21	S. K. Clapp	230	119	1.27	3.39	151	By wad- ing.
10	Aug. 9	S. K. Clapp	200	141	1.31	3.45	185	.....
11	Oct. 11	T. W. Norcross	280	321	1.14	3.88	366	By wad- ing.

MEAN DAILY GAGE HEIGHT, IN FEET, OF SACO RIVER, AT
CONWAY CENTER, N. H., FOR 1903.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.94	3.54	4.01	.....
2	3.94	3.50	4.00	.....
3	3.93	3.50	4.02	.....
4	3.90	3.51	3.90	.....
5	3.92	3.52	3.92	.....
6	3.91	3.55	4.05	3.90
7	3.80	3.53	3.96	.....
8	3.67	3.62	3.95	.....
9	3.68	5.12	3.88	.....
10	3.67	5.65	3.85	.....
11	3.70	4.82	3.85	.....
12	3.65	4.40	3.80	4.00
13	3.65	4.32	3.78	.....
14	3.62	4.22	3.72	.....
15	3.55	4.05	3.75	.....
16	3.54	4.02	3.80	.....
17	3.62	4.00	3.78	.....
18	4.06	6.52	4.18	.....
19	3.52	5.30	4.00	4.50
20	3.71	4.70	3.78	.....
21	3.60	4.45	3.79	.....
22	3.60	4.25	3.61	.....
23	3.50	4.22	3.88	.....
24	3.48	4.30	3.72	.....
25	3.50	4.22	3.90	.....
26	4.31	3.50	4.28	4.10	.....
27	4.13	3.52	4.22	*	.....
28	3.98	3.55	4.00	.....	.....
29	3.92	3.58	4.00	.....	.....
30	3.95	3.55	3.98	.....	.....
31	3.95	.....	4.08	.....	.....

* Readings from November 27 to December 31 through ice.

MEAN DAILY GAGE HEIGHT, IN FEET, OF SACO RIVER, AT
CONWAY CENTER, N. H., FOR 1904.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.75	9.90	4.70	4.10	3.45	3.38	5.46	4.36	.....
2	5.50	9.22	4.65	4.38	3.46	3.37	4.94	4.62	.....
3	7.10	.....	.....	5.55	8.60	4.58	4.18	3.56	3.37	4.68	4.30	.....
4	5.30	8.82	4.52	3.98	3.67	3.82	4.50	4.25	.....
5	5.28	9.02	4.52	3.84	3.60	3.76	4.26	4.14	.....
6	7.50	5.75	8.48	4.68	3.78	3.54	3.54	4.19	.....	.....
7	6.10	.....	.....	6.18	7.72	4.72	3.74	3.52	3.45	4.26	.....	.....
8	5.98	7.72	4.61	3.66	3.45	3.41	3.98	.....	.....
9	7.10	7.58	4.47	3.62	3.42	3.37	3.94	.....	.....
10	7.00	.....	.....	9.70	8.85	4.38	3.58	3.42	3.41	3.93	.....	.....
11	8.68	9.10	4.28	3.57	3.44	3.36	4.04	.....	.....
12	7.75	7.68	4.20	3.60	3.48	3.32	3.89	.....	.....
13	7.08	7.04	4.15	3.70	3.46	3.32	3.89	.....	.....
14	6.40	.....	6.60	6.68	4.12	3.62	3.47	3.26	3.57	.....	.....
15	6.20	7.10	4.07	3.58	3.44	5.34	3.86	.....	.....
16	6.05	8.94	4.05	3.54	3.44	5.43	3.85	.....	.....
17	7.00	.....	.....	5.70	8.06	3.58	3.45	3.42	4.41	3.92	.....	.....
18	5.70	7.58	3.92	3.46	3.42	4.05	3.92	.....	.....
19	5.82	9.24	3.84	3.42	3.35	3.90	3.83	.....	.....
20	6.20	9.58	3.83	3.42	3.54	3.86	3.88	.....	.....
21	6.20	.....	5.88	7.78	3.75	3.40	6.18	3.92	8.13	.....	.....
22	5.72	6.98	3.88	3.38	4.48	4.05	5.86	.....	.....
23	5.94	6.16	3.95	3.38	4.04	3.68	5.86	.....	.....
24	7.00	.....	.....	6.35	6.28	3.83	3.40	3.62	3.76	5.25	.....	.....
25	7.20	6.01	3.75	3.46	3.72	4.75	4.92	.....	.....
26	7.90	5.78	3.70	3.52	3.63	4.34	5.12	.....	.....
27	7.75	5.58	3.70	3.56	3.56	4.20	4.90	.....	.....
28	6.70	.....	7.78	5.35	3.65	3.74	3.54	4.42	4.56	.....	.....
29	10.02	5.01	3.71	3.58	3.48	4.00	4.49	.....	.....
30	10.82	4.91	3.70	3.51	3.44	5.88	4.45	.....	.....
31	6.75	.....	6.52	.....	4.75	.....	3.48	3.42	.....	4.46	.....	.....

River frozen January 1-March 30.

RATING TABLE FOR SACO RIVER AT CONWAY CENTER,
N. H., FROM AUGUST 27, 1903, TO DECEMBER 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
.....	.....	4.00	380	5.00	935	6.00	1,765	7.00	2,790	8.00	4,120	9.00	5,730	10.00	7,555
.....	.....	4.10	425	5.10	1,005	6.10	1,855	7.10	2,910	8.10	4,270	9.10	5,900	10.10	7,745
.....	.....	4.20	475	5.20	1,080	6.20	1,950	7.20	3,030	8.20	4,420	9.20	6,080	10.20	7,935
3.30	133	4.30	525	5.30	1,160	6.30	2,050	7.30	3,150	8.30	4,580	9.30	6,260	10.30	8,125
3.40	166	4.40	575	5.40	1,240	6.40	2,150	7.40	3,280	8.40	4,740	9.40	6,440	10.40	8,315
3.50	200	4.50	625	5.50	1,320	6.50	2,250	7.50	3,410	8.50	4,900	9.50	6,620	10.50	8,510
3.60	235	4.60	675	5.60	1,405	6.60	2,350	7.60	3,545	8.60	5,060	9.60	6,800	10.60	8,710
3.70	271	4.70	730	5.70	1,495	6.70	2,460	7.70	3,685	8.70	5,220	9.70	6,985	10.70	8,910
3.80	307	4.80	795	5.80	1,585	6.80	2,570	7.80	3,825	8.80	5,390	9.80	7,175	10.80	9,110
3.90	343	4.90	865	5.90	1,675	6.90	2,680	7.90	3,970	8.90	5,560	9.90	7,365	.....	.....

This table is applicable only for open channel. It is based upon discharge measurements made during 1903 and 1904. The table is well defined between gage heights 3.40 and 9.00 feet. Outside these limits it has been extended by interpolation. The table has been applied to the nearest hundredth up to 7.00 feet gage height; above gage height 7.00 it has been applied to the nearest half-tenth.

ESTIMATED MONTHLY DISCHARGE OF SACO RIVER AT
CONWAY CENTER, N. H., FOR 1903 AND 1904.

(Drainage area, 385 square miles.)

MONTH.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1903.							
August 26-31....	530	350	402	1.04	.23	.....	.....
September	405	193	264	.69	.77	.54	1.43
October.....	2,270	200	550	1.43	1.65	.51	3.26
November 1-26..	465	239	339	.88	.85	.....	1.20
December							5.09
1904.							
January							3.72
February.....							2.75
March.....							4.16
April.....	9,110	1,160	2,815	7.31	8.16	2.10	3.95
May.....	7,365	760	3,682	9.56	11.02	2.20	5.05
June.....	742	228	451	1.17	1.31	.74	1.78
July.....	565	159	250	.65	.75	.38	1.99
August.....	1,930	149	276	.72	.83	.20	4.05
September.....	1,657	120	411	1.07	1.19	.22	5.53
October.....	4,345	224	754	1.96	2.26	.73	3.11

River frozen November 27, 1903, to March 30, 1904.

Rainfall records for Bartlett, N. H.

MERRIMACK RIVER DRAINAGE BASIN.

This basin, which has a total drainage area of 5,015 square miles, lies in the states of New Hampshire and Massachusetts; of this, 3,815 square miles are in the former state and 1,200 square miles in the latter. Merrimack River is formed at Franklin, N. H., by the junction of Pemigewasset and Winnepesaukee Rivers. The headwaters of the Pemigewasset lie in the White Mountain region at elevations of approximately 2,000 feet; thence they flow southerly through New Hampshire with very steep slopes. On this branch of the Merrimack there is very little lake storage. Squam and Newfound Lakes, aggregating about 20 square miles of surface area, are the only bodies of water of any importance. Above Plymouth probably 85 per cent. of the basin is in heavy forest. A very insignificant amount of water power is utilized. The total drainage area of the Pemigewasset River is 1,085 square miles.

PEMIGEWASSET RIVER AT PLYMOUTH, N. H.

This station was established September 5, 1903, by N. C. Grover. It is located at the wooden highway bridge below the mouth of Baker's River in the town of Plymouth. The drainage area at this point is 615 square miles. The headwaters of the river lie in the mountainous country to the west of Mount Washington, at elevations of more than 2,000 feet. At North Woodstock, Pemigewasset River is formed by the junction of East Branch, Middle Branch and Moosilauke Brook, at an elevation of about 700 feet. Thence the waters flow south, receiving Mad River from the east and Baker's River from the west, until, at Plymouth, about 20 miles below North Woodstock, the elevation is between 400 and 500 feet. The underlying rock in this basin is usually granite, exposed in the mountain summits. The basin contains some of the best spruce standing in New England. Large areas in the basin of East Branch are still in virgin forest; other areas have been practically stripped, especially

on Hancock Brook, a tributary of East Branch, and in the basin of Middle Branch. A statement in detail of the forest conditions on this drainage area will be found on page 143.

The height of water at Plymouth has been recorded daily since January 1, 1886, during which time extensive deforestation in the basin above has taken place. This record of gage height, which has been kindly given to the United States Geological Survey by Locks and Canals Company of Lowell, Mass., has been used as a basis for the estimates of daily discharge of the river since that date. The original observations were made once daily to the nearest quarter inch and have been reduced to the nearest hundredth foot and applied to the rating table, which is based on meter measurements made in 1903 and 1904. During this period of 17 years the gage has been carefully maintained and read; there has been no change in its datum.

A standard chain gage has been installed by the United States Geological Survey and is attached to the guard rail of the sidewalk of the bridge on the upstream side; length of chain, 34.69 feet. It is referred to bench marks as follows: (1) Marked point on rail of bridge near gage; elevation, 34 feet; (2) North corner of intermediate cast-iron gage attached to a granite post and set by Locks and Canals Company of Lowell, Mass., elevation 13.27 feet; (3) North corner of lowest cast-iron gage set by same company, elevation, 7.11 feet. All elevations refer to the datum of the gage. The initial point for soundings is at the top of the face of the right abutment on the upstream side. The channel is straight for 1,000 feet above and 1,000 feet below the bridge, and is about 180 feet wide at ordinary stages, broken by one pier. The banks are high and rocky. The bed is permanent; it is rocky in the right half and gravelly in the left. The velocity is rapid in the right and sluggish in the left half. At low water the measurements of flow through the left channel are made by wading. The gage is read twice daily by Frank Morton. The rating curve for this station is shown on Plate I.

LIST OF DISCHARGE MEASUREMENTS OF PEMIGEWASSET
RIVER AT PLYMOUTH, N. H.

No.	Date.	Hydrographer.	Width. (Feet.)	Area of sec. (Sq. ft.)	Mean veloc. (Ft. per sec.)	Gage height. (Feet.)	Dis- charge. (Sec. ft.)	Remarks.
	1903.							
1	Sept. 5	N. C. Grover....	.....	250	1.08	1.85	270	..
2	Sept. 22	H. K. Barrows..	.....	238	1.00	1.74	238	..
3	Oct. 9	N. C. Grover....	.....	243	1.17	1.98	285	..
	1904.							
4	Apr. 14	N. C. Grover....	215	931	2.88	4.75	2,680	..
5	Apr. 14	N. C. Grover....	215	920	2.80	4.70	2,580	..
6	Apr. 20	S. K. Clapp.....	205	836	2.70	4.34	2,257	..
7	Apr. 30	S. K. Clapp.....	234	2,043	5.65	10.36	12,800	*
8	May 21	S. K. Clapp.....	220	1,360	4.17	6.75	5,675	†
9	May 25	N. C. Grover....	203	782	2.55	4.06	2,000	..
10	June 9	N. C. Grover....	190	559	1.86	3.02	1,042	..
11	July 26	S. K. Clapp.....	85	197	0.91	1.55	179	..
12	July 5	S. K. Clapp.....	135	288	1.45	2.12	419	..
13	Aug. 5	S. K. Clapp.....	135	278	1.61	2.11	448	..
14	Aug. 23	H. K. Barrows..	.....	.....	.....	3.15	.....	..
15	Sept. 23	.....	146	350	1.84	2.47	642	..
16	Oct. 14	T. W. Norcross..	166	399	1.81	2.65	722	..

* (Corrected meter, 10 per cent. off.) 1 ft. depth. Coefficient, 0.90.

† 1 ft. depth. Coefficient, 0.90.

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1886.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.60	4.35	6.10	9.77	4.60	3.68	2.43	.....	2.77	3.35	5.35	4.02
2	9.10	4.10	5.93	17.10	4.60	3.43	2.43	2.10	2.43	2.93	4.10	4.68
3	7.27	3.93	5.77	6.60	4.52	3.27	2.43	2.68	2.35	.....	3.52	3.60
4	6.43	4.93	5.77	6.10	4.43	4.43	.....	2.43	2.02	2.52	3.27	4.27
5	8.77	4.77	5.77	5.35	4.60	3.68	2.43	2.27	.....	2.43	3.10	.....
6	15.27	4.60	5.77	5.35	4.93	.....	2.10	2.10	1.85	2.43	2.93	4.27
7	8.52	4.35	5.77	5.68	4.43	3.18	2.10	2.10	1.77	2.27	.....	4.77
8	6.10	4.10	5.77	4.93	4.10	3.10	2.10	.....	1.77	2.27	5.60	4.93
9	5.35	3.93	5.68	4.60	6.35	3.10	2.10	2.10	1.68	2.18	4.27	4.77
10	5.10	3.93	5.60	5.43	4.93	3.10	2.10	2.10	1.60	.....	.....	4.60
11	4.60	3.93	5.60	5.27	4.43	2.93	.....	2.10	1.68	2.10	3.77	4.43
12	5.60	3.93	5.60	5.35	4.27	2.77	2.10	2.10	.....	2.10	3.52	.....
13	5.60	4.27	5.60	4.85	4.10	.....	2.10	2.10	1.68	2.10	3.35	4.10
14	5.60	16.35	5.60	6.60	4.02	2.77	2.10	2.10	1.68	2.18	3.35	4.10
15	5.60	13.93	5.60	8.60	3.85	3.93	2.10	.....	1.77	2.18	.....	3.93
16	5.60	12.27	5.60	9.27	4.52	3.68	2.10	2.10	1.77	2.77	3.10	3.85
17	5.52	11.60	5.43	7.43	5.93	3.27	3.77	2.52	1.93	.....	3.02	3.60
18	5.43	9.77	5.27	9.35	4.43	3.10	.....	3.43	2.60	2.18	2.68	3.60
19	5.27	9.27	5.18	10.60	4.02	2.93	2.68	2.68	.....	2.18	4.43	.....
20	5.10	8.10	5.10	10.43	3.85	.....	2.60	2.35	2.27	2.10	11.77	3.77
21	5.10	7.27	4.93	9.68	3.85	2.52	2.43	2.10	2.85	2.10	6.27	3.77
22	5.10	7.10	4.93	9.43	3.60	2.52	2.43	.....	2.35	2.10	.....	3.77
23	4.93	7.10	5.02	6.77	.....	2.43	2.27	2.10	2.10	2.10	4.52	3.77
24	4.85	6.93	4.77	6.77	3.85	2.43	2.10	2.10	2.02	.....	4.18	3.77
25	4.77	6.27	4.60	6.27	3.18	2.43	.....	2.10	2.02	2.02	5.02	4.10
26	4.60	6.27	4.60	5.77	4.60	2.52	2.10	2.10	.....	2.02	5.18	.....
27	4.27	6.10	4.93	5.27	4.77	.....	2.10	2.10	2.02	2.18	.....	4.85
28	4.27	6.10	5.18	5.02	4.77	3.18	2.43	2.10	2.27	3.52	4.27	4.52
29	4.43	.....	5.10	4.85	4.60	2.68	2.43	.....	4.93	3.43	3.85	4.10
30	4.60	.....	5.43	4.85	.....	.....	2.27	1.93	4.43	2.93	3.68	3.85
31	4.43	.....	6.60	.....	3.85	.....	2.10	1.93	.....	.....	.....	3.85

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1887.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.02	6.18	4.43	4.43	9.43	4.68	3.43	3.68	2.60	2.02	2.10	4.27
2	.....	5.60	4.43	4.43	9.02	5.43	3.27	3.35	2.60	.....	2.10	4.27
3	5.02	5.27	4.52	4.43	9.60	5.10	3.15	3.10	2.52	2.10	2.02	5.10
4	4.43	5.27	4.52	4.43	9.85	7.35	3.02	2.93	.....	2.10	2.02	4.93
5	4.02	5.10	4.52	5.10	12.10	5.52	2.93	2.85	2.43	2.27	2.10	4.60
6	4.02	.....	.....	6.10	9.93	4.93	2.85	.....	2.35	2.52	.....	4.60
7	4.02	4.77	4.52	5.85	9.10	4.52	4.68	.....	2.35	2.27	2.10	3.93
8	3.85	4.77	4.60	5.35	7.77	4.27	3.77	3.60	2.52	2.10	2.10	3.77
9	.....	4.60	4.77	4.27	9.85	3.93	3.43	3.10	2.52	.....	2.10	3.43
10	3.68	4.43	4.77	5.68	9.68	3.77	3.52	2.93	2.52	2.02	2.10	.....
11	3.68	4.43	4.77	9.60	9.68	3.85	3.60	2.77	.....	2.10	2.10	6.10
12	3.60	4.43	4.68	13.10	7.52	3.43	5.43	3.43	2.27	2.27	2.27	8.02
13	3.60	.....	.....	12.10	6.18	3.18	4.10	3.10	2.68	2.10	.....	6.18
14	3.60	4.27	4.85	9.10	5.60	3.18	3.18	.....	2.68	2.10	2.27	5.02
15	3.60	4.27	4.93	7.68	5.35	3.02	3.10	2.60	2.85	2.10	2.18	4.43
16	.....	4.27	4.93	6.43	5.77	2.93	2.93	2.52	2.68	.....	5.18	4.10
17	3.60	4.43	4.85	6.10	6.18	3.35	2.77	2.43	2.60	2.02	3.85	3.60
18	3.60	4.60	4.77	5.35	6.02	3.35	2.68	2.43	.....	2.02	3.27	3.35
19	3.60	4.60	4.77	4.93	5.35	2.93	3.10	3.27	2.27	2.02	.....	3.43
20	3.60	.....	.....	4.77	5.35	2.77	2.93	2.93	2.35	2.02	4.18	3.43
21	3.60	4.60	4.93	5.68	5.85	2.68	2.77	.....	2.27	2.02	4.43	3.43
22	3.60	4.60	5.10	6.77	4.68	2.77	2.68	2.43	2.18	3.27	3.60	3.35
23	.....	4.60	5.35	7.77	4.60	4.18	3.35	2.60	2.18	.....	3.10	3.93
24	3.77	4.60	4.85	10.10	4.52	14.02	6.18	3.68	.....	2.52	3.02	4.10
25	5.27	4.60	4.85	10.10	4.27	9.10	6.60	4.10	2.10	2.43	2.85	4.27
26	6.10	4.43	4.77	8.68	7.52	5.85	8.52	3.60	.....	2.35	2.85	4.18
27	4.93	.....	.....	7.52	8.60	5.02	5.52	3.02	2.02	2.27	3.85	4.10
28	4.77	4.43	4.60	7.10	6.10	4.43	4.60	.....	2.02	2.18	5.27	4.02
29	5.10	.....	4.68	7.68	7.10	4.02	4.10	2.60	2.02	2.18	5.93	4.52
30	.....	.....	.....	11.77	6.60	3.77	4.10	2.52	2.02	.....	4.43	4.77
31	7.10	.....	.....	.....	5.27	.....	.....	2.52	.....	2.10	.....	4.68

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1888.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	3.93	4.68	.....	12.93	5.35	.....	2.10	2.27	3.60	4.35	4.52
2	5.10	3.93	4.85	7.27	10.60	5.68	3.10	2.43	2.85	4.10	4.35	3.93
3	6.02	3.93	4.77	7.10	8.18	.....	2.93	2.10	2.52	4.27	4.27	3.93
4	5.77	3.93	.....	6.77	8.10	4.60	2.85	2.02	2.27	3.85	5.43	3.77
5	5.43	.....	4.60	6.60	6.85	4.27	2.60	.....	2.18	3.52	4.60	3.60
6	5.27	3.93	4.52	6.43	.....	4.18	2.52	2.02	2.18	3.35	4.27	3.52
7	5.10	3.93	4.60	8.35	9.27	4.27	2.43	2.02	2.10	7.10	4.10	3.27
8	.....	4.02	4.52	.....	9.02	4.02	.....	1.93	2.02	6.77	3.93	3.27
9	4.93	4.02	4.43	5.93	9.10	3.68	2.27	2.10	4.68	5.18	4.18	3.18
10	4.77	3.93	4.52	5.60	11.68	.....	.....	2.43	3.85	4.60	7.52	3.10
11	4.68	3.93	.....	4.68	11.27	3.27	2.27	2.10	3.10	4.18	7.10	3.10
12	4.43	.....	4.43	4.10	11.35	3.18	2.60	.....	2.85	4.02	5.85	3.10
13	4.27	3.93	4.43	4.60	13.85	3.10	3.60	2.02	2.68	3.93	4.93	2.60
14	4.10	3.93	4.27	4.18	12.43	2.93	3.68	4.10	2.68	4.35	4.52	2.77
15	.....	4.10	4.68	.....	9.68	2.93	.....	3.35	2.52	4.18	4.27	2.93
16	4.43	4.10	4.77	3.93	8.10	3.18	2.77	2.77	2.43	4.02	5.85	3.35
17	4.27	4.10	4.77	4.18	7.27	.....	2.60	2.52	2.35	3.85	5.18	4.27
18	4.27	4.10	.....	4.60	6.43	2.85	2.52	3.60	4.02	5.27	4.35	7.10
19	4.10	.....	4.68	4.27	5.93	2.52	2.43	.....	6.18	4.52	4.10	5.35
20	4.10	4.10	4.68	4.93	6.85	2.52	2.43	2.60	4.35	4.35	5.60	4.10
21	4.10	4.35	4.85	4.60	7.02	2.52	2.52	2.35	4.02	4.60	4.27	3.52
22	.....	4.77	7.27	... ..	5.77	2.85	.....	2.52	7.10	4.27	4.10	6.43
23	4.02	6.27	11.02	4.85	5.68	2.02	2.27	3.60	5.27	4.02	3.52	5.60
24	4.02	5.77	7.52	4.93	6.85	.....	2.18	2.93	4.35	3.77	3.77	5.43
25	4.02	5.35	.....	4.43	6.43	6.60	2.18	2.60	3.85	5.52	3.85	5.35
26	4.02	.....	7.10	4.93	6.85	5.77	2.10	.....	3.52	4.60	3.60	5.52
27	4.85	5.27	6.77	5.77	.....	5.10	2.10	2.43	7.85	4.18	4.93	6.10
28	4.85	5.10	6.85	8.10	5.35	4.10	2.10	2.52	5.02	6.60	6.85	8.77
29	.....	4.93	7.35	12.35	6.93	3.60	.....	2.35	4.18	6.85	5.68	5.35
30	4.85	.....	10.85	15.10	6.77	3.35	2.10	2.27	3.85	5.68	4.85	4.43
31	4.85	.....	8.27	.....	5.93	.....	2.02	2.18	.....	4.77	.....	4.35

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1889.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.35	4.60	3.52	3.35	5.60	2.85	2.68	4.85	.....	3.10	3.43	.....
2	3.35	4.52	3.52	3.10	4.93	9.60	2.52	7.93	1.93	6.60	3.10	3.43
3	3.52	.....	.....	3.18	4.43	6.02	2.43	5.27	2.02	5.52	.....	3.27
4	3.27	4.27	3.52	3.18	4.35	4.43	4.52	4.93	1.77	4.43	.....	3.10
5	3.18	4.27	3.77	3.93	.....	4.18	5.10	4.27	1.77	4.02	.....	3.10
6	3.43	4.52	4.68	3.77	4.10	4.27	3.68	4.27	1.77	.....	.....	3.43
7	3.85	4.77	6.77	.....	4.43	4.27	.....	3.77	2.27	6.43	4.27	3.60
8	5.77	4.43	5.93	4.77	4.43	3.93	2.77	3.27	.....	8.35	3.93	.....
9	4.27	4.43	5.27	.....	4.43	4.77	2.77	3.18	2.27	5.60	3.77	5.10
10	8.93	3.27	.....	5.18	4.35	5.43	2.68	3.10	2.10	4.52	.....	8.60
11	5.52	4.10	4.60	4.93	4.27	6.60	2.60	.....	2.02	4.27	3.52	5.60
12	4.60	4.10	4.27	5.85	.....	4.93	2.77	3.27	1.85	3.93	3.35	6.68
13	3.68	4.10	4.27	6.27	3.43	4.35	2.68	3.02	1.85	.....	3.27	5.27
14	3.52	3.85	4.27	.....	3.43	3.85	.....	2.93	1.85	3.52	.....	4.52
15	3.10	3.85	4.10	4.35	3.77	3.60	2.68	3.10	.....	3.35	3.43	.....
16	3.10	3.85	4.10	4.60	3.52	.....	2.52	3.35	2.18	3.18	3.10	4.10
17	3.68	.....	.....	5.18	3.35	3.60	2.43	3.10	2.27	3.10	.....	3.85
18	6.35	3.85	4.60	5.93	3.27	3.35	2.43	.....	3.60	3.02	2.93	3.68
19	4.10	3.85	5.18	7.60	.....	3.60	2.35	2.68	3.60	2.93	2.93	4.10
20	3.60	3.85	4.85	8.43	2.93	3.27	5.18	2.60	7.52	.....	3.02	5.77
21	3.27	3.68	4.02	7.35	4.02	3.10	7.77	2.52	4.60	2.68	4.43	5.10
22	6.68	3.60	3.85	7.77	7.68	2.85	4.85	2.52	.....	2.68	4.52	.....
23	5.85	3.60	4.18	5.43	5.60	.....	3.93	2.43	3.35	2.60	5.35	4.27
24	5.85	.....	.....	4.68	4.43	2.60	3.68	2.35	3.60	2.60	.....	4.10
25	5.85	3.60	4.93	4.43	4.02	2.60	3.35	.....	3.18	2.60	3.93	3.93
26	5.85	3.52	4.43	5.77	.....	2.52	3.02	2.18	3.02	2.52	3.60	3.77
27	5.27	3.52	3.77	6.93	3.52	2.60	2.85	2.10	4.43	.....	3.43	3.77
28	5.10	3.52	3.52	7.43	3.35	3.68	3.10	2.10	3.77	3.27	3.43	3.43
29	4.93	.....	3.77	8.27	3.43	3.60	2.93	2.10	.....	4.27	4.60	.....
30	4.60	.....	3.77	6.60	3.10	.....	7.10	2.02	3.10	4.10	3.93	2.93
31	4.60	.....	.....	.....	2.93	.....	6.35	2.02	.....	2.60	.....	3.68

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1890.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.27	4.85	6.68	4.43	6.93	.....	2.60	2.43	5.52	3.18	3.52	2.77
2	4.77	.....	.....	4.18	8.27	4.18	2.52	2.60	4.60	3.02	.....	4.10
3	6.10	4.60	5.60	3.93	6.68	3.93	2.60	.....	4.02	2.93	3.60	3.77
4	5.93	4.60	5.60	3.85	.....	3.77	7.77	2.18	3.60	2.93	3.60	3.60
5	.....	4.60	5.60	6.60	10.27	4.43	4.77	2.10	3.35	.....	3.35	4.10
6	6.10	5.27	4.93	.....	10.10	5.60	.....	2.02	3.18	3.35	3.18	4.10
7	6.60	5.10	4.60	5.27	12.60	5.18	3.35	2.93	.....	3.10	3.10	.....
8	6.43	4.68	4.43	5.60	8.27	.....	3.18	2.35	2.02	3.27	3.10	3.77
9	7.10	.....	.....	5.18	6.60	.....	3.02	2.18	2.85	4.27	.....	3.60
10	6.60	5.77	4.43	4.93	5.93	4.02	3.02	.....	3.60	3.85	3.43	3.52
11	6.68	5.10	4.43	5.68	7.68	3.77	2.77	2.10	3.18	3.60	3.93	3.52
12	.....	4.85	4.43	4.93	6.77	3.77	2.60	2.02	3.27	.....	3.43	3.43
13	6.93	4.85	4.77	.....	5.77	3.68	.....	1.93	3.85	3.35	3.35	3.27
14	6.68	4.60	7.27	8.27	6.27	4.35	2.43	1.93	11.60	3.18	3.18	.....
15	6.43	4.68	7.02	10.35	7.10	.....	2.35	1.85	6.68	3.52	3.10	3.27
16	6.60	.....	.....	8.10	6.60	4.02	3.43	1.85	5.35	3.93	.....	3.27
17	6.43	5.85	5.43	7.10	6.18	3.60	2.85	.....	10.68	3.60	3.35	3.27
18	6.85	5.27	5.43	6.68	.....	3.43	2.52	1.85	10.02	.....	5.85	3.35
19	.....	4.85	5.10	5.52	4.93	3.18	2.35	2.10	7.35	.....	5.68	3.52
20	6.27	4.60	4.77	.....	7.43	3.10	.....	2.27	5.60	7.60	4.77	3.10
21	6.02	4.27	5.10	6.93	12.10	2.93	2.35	2.85	.....	6.77	4.18	.....
22	6.02	4.27	5.52	6.02	6.77	.....	2.27	2.52	4.27	5.35	3.85	3.10
23	5.77	.....	.....	6.60	5.60	2.77	2.18	3.60	3.93	4.77	.....	3.10
24	5.35	4.27	5.60	8.27	5.10	2.77	2.10	8.27	3.77	4.43	3.60	3.10
25	5.10	4.60	5.10	8.52	....	3.10	2.10	5.35	3.60	4.43	3.43	3.10
26	.....	5.43	5.10	6.77	4.35	3.35	4.60	4.02	3.35	.....	3.35	3.10
27	5.27	.....	5.10	.....	8.48*	3.02	.....	7.15†	3.85	3.85	3.10	3.10
28	4.93	7.02	4.85	6.10	8.68	3.02	3.10	9.35	.....	3.77	2.77	.....
29	4.93	.....	4.43	6.10	6.43	.....	2.60	5.52	3.35	3.60	2.77	3.10
30	5.10	.....	.....	5.85	5.52	2.60	2.43	4.52	3.85	3.77	.....	3.10
31	4.85	.....	4.43	.....	4.85	.....	2.35	.....	.....	3.68	.....	3.10

* Highest for day, 11.60.

† Highest for day, 10.77.

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1891.

ay.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.18	.....	.....	5.43	4.93	.....	2.35	3.02	2.85	1.60	.....	3.77
2	3.18	5.27	5.60	5.35	5.85	3.60	2.35	.....	3.02	1.52	1.68	3.60
3	3.35	4.93	5.43	5.10	.....	3.43	2.27	3.27	2.93	1.52	1.77	3.43
4	.....	4.93	5.35	4.77	6.10	3.77	2.18	2.18	2.68	.....	1.60	2.85
5	3.52	4.27	5.18	.....	5.18	4.43	.....	2.10	2.52	1.60	1.43	7.10
6	3.52	4.27	5.10	4.18	4.60	3.60	2.85	2.02	.....	1.52	1.43	.....
7	3.43	4.43	5.02	4.10	4.18	.....	2.77	2.35	3.35	1.52	1.43	4.10
8	3.43	.....	.....	3.93	5.02	.....	2.77	2.27	3.02	1.68	.....	3.60
9	3.43	4.35	5.02	3.85	3.85	.....	3.52	.....	2.68	2.18	1.60	3.10
10	3.43	4.35	5.35	3.27	.....	2.77	2.77	2.02	2.43	1.85	1.60	3.10
11	.....	4.43	6.68	4.60	5.60	2.68	2.52	1.93	2.35	.....	1.68	2.85
12	3.85	.....	6.10	10.60	5.77	2.60	.....	1.85	2.27	1.60	4.02	2.60
13	7.68	.....	5.93	8.60	5.02	2.60	2.27	1.93	.....	1.60	3.10	.....
14	6.60	4.18	7.35	7.10	4.68	.....	2.10	2.02	2.10	1.68	2.60	2.60
15	5.77	.....	.....	8.60	4.60	2.43	2.02	1.85	2.10	1.77	.....	2.35
16	5.27	4.10	6.43	8.43	4.27	2.35	2.02	.....	2.02	1.68	2.10	3.52
17	4.93	4.35	5.68	7.85	4.10	2.27	2.02	2.27	2.02	1.68	2.10	3.27
18	.....	5.18	5.43	8.77	5.52	4.18	1.93	2.18	1.93	.....	5.60	3.60
19	4.93	5.10	5.27	10.60	4.60	4.10	5.35	2.02	2.02	1.60	3.35	3.43
20	4.77	4.85	5.02	11.60	4.18	3.35	4.02	2.02	.....	1.60	2.77	.....
21	4.52	4.43	4.85	9.10	4.18	.....	2.93	1.85	1.93	2.02	2.77	3.35
22	4.52	.....	.....	8.10	5.68	2.77	2.35	4.02	1.93	2.43	.....	3.18
23	7.43	4.60	10.68	10.10	5.10	4.43	2.35	.....	1.85	2.10	2.68	3.10
24	8.60	4.60	13.52	10.68	.....	3.52	2.18	3.18	1.85	1.85	8.27	5.27
25	.....	4.68	12.10	7.43	3.93	3.35	3.35	3.02	1.85	.....	5.35	8.27
26	6.43	8.60	6.77	.....	3.93	3.02	.....	2.77	1.77	1.68	3.93	6.35
27	6.10	9.43	5.60	5.35	3.77	2.77	2.77	2.43	.....	1.77	3.52	.....
28	5.60	7.35	5.35	5.60	3.52	.....	2.43	3.35	1.68	1.68	3.27	4.60
29	5.35	.....	.....	6.10	3.35	2.43	2.27	5.10	1.68	1.68	.....	3.60
30	5.18	.....	6.10	5.10	4.52	2.43	2.35	.....	1.60	1.68	3.85	8.10
31	5.10	.....	5.60	.....	.....	.....	2.35	3.18	.....	1.60	.....	6.85

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1892.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.60	4.60	2.85	2.85	.....	4.93	6.85	2.02	3.35	2.18	2.43	2.77
2	4.52	4.43	2.85	3.52	3.43	4.52	4.93	.....	3.18	.....	2.35	2.85
3	14.10	4.27	2.85	.....	3.93	4.18	.....	.....	2.85	2.02	2.52	2.35
4	7.43	4.02	2.60	7.10	5.85	3.93	8.85	1.93	.....	2.10	4.43	.....
5	5.35	3.85	2.52	7.27	6.60	.....	6.85	2.02	2.52	2.43	2.85	2.45
6	4.35	3.52	.....	7.10	4.68	4.43	5.02	2.27	2.43	2.27	.....	2.10
7	4.27	.....	2.27	8.35	4.16	4.18	4.43	.....	2.60	2.10	3.10	2.60
8	3.85	3.35	2.27	5.77	.....	4.10	4.85	1.60	2.43	2.18	3.10	2.52
9	3.43	3.35	2.35	5.35	3.43	3.60	3.68	1.77	2.35	.....	5.68	2.43
10	.....	3.35	2.85	.....	3.43	.....	.....	2.02	2.18	2.27	4.10	2.68
11	4.60	3.27	3.93	4.27	3.43	3.10	3.35	2.02	.....	2.18	3.85	.....
12	4.77	3.27	3.52	3.85	5.10	.....	3.10	2.85	2.02	2.10	3.35	2.35
13	4.85	3.10	.....	3.43	6.02	2.85	2.93	4.43	2.02	.....	.....	2.27
14	9.52	.....	3.43	3.35	5.10	2.68	2.68	.....	2.02	.....	3.10	2.10
15	11.10	3.27	3.10	3.18	.....	2.60	2.60	3.43	8.85	.....	3.10	2.35
16	5.60	3.10	2.60	3.10	6.10	2.60	2.52	2.85	3.52	.....	3.60	2.18
17	.....	3.27	2.35	.....	6.35	2.52	.....	2.52	3.52	.....	11.85	2.10
18	4.27	3.10	2.35	2.93	4.60	2.27	2.27	2.27	.....	.....	7.10	.....
19	4.27	3.10	2.18	2.85	4.10	.....	2.35	2.10	2.77	.....	9.10	2.10
20	4.43	.....	.....	2.85	3.77	2.68	2.27	3.10	2.60	2.35	.....	2.02
21	3.77	.....	1.85	2.85	4.18	3.85	2.10	.....	2.60	2.43	4.85	1.85
22	3.60	3.10	2.10	3.27	6.10	3.35	2.10	2.85	2.52	2.43	4.43	1.77
23	3.60	3.10	1.93	4.60	6.43	2.93	2.02	2.43	2.35	.....	4.02	1.68
24	.....	3.43	2.02	.....	7.52	2.68	.....	2.18	2.27	2.02	3.43	.....
25	3.43	3.35	2.10	3.85	5.85	3.35	2.02	2.10	.....	3.48†	3.39	1.68
26	3.77	3.27	1.85	3.52	5.60	7.52	2.02	5.85	2.18	2.18	.....	1.52
27	4.60	.....	.....	3.18	5.10	6.10	2.02	5.85	3.02	.....	.....	.....
28	4.60	.....	2.43	3.10	6.85	9.10*	1.85	7.10	2.85	2.18	3.02	1.43
29	4.85	3.02	2.60	4.68	.....	8.52	1.85	4.85	2.43	2.10	2.85	1.35
30	5.10	.....	2.52	4.18	4.60	5.27	2.10	3.85	2.27	.....	2.85	1.35
31	.....	.....	2.60	.....	5.85	.....	.....	3.35	.....	2.60	.....	1.35

* Highest for day, 11.10.

† Highest for day, 4.93.

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1893.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	1.43	2.02	3.60	7.10	3.18	2.10	1.60	3.18	.....	3.85	3.52
2	2.60	1.60	2.02	.....	6.85	3.10	.....	1.85	2.85	2.02	3.43	2.85
3	3.18	1.52	1.85	4.10	6.85	3.02	2.10	1.77	.....	1.93	6.27	.....
4	3.10	1.43	1.85	4.02	7.43	.....	2.02	1.68	2.35	1.93	3.10	3.85
5	3.10	.....	.....	4.10	12.43	3.02	1.93	1.60	2.27	1.85	.....	4.10
6	2.60	1.43	1.85	4.85	8.43	2.85	2.02	.....	2.18	1.93	2.85	4.60
7	2.27	1.43	1.85	4.85	.....	2.85	1.93	1.60	2.10	1.85	2.77	4.60
8	.....	1.43	1.85	4.60	7.10	2.60	1.93	2.93	2.35	.....	2.60	4.35
9	1.85	1.43	1.85	.....	7.10	2.60	1.85	2.52	2.93	2.43	2.43	4.10
10	1.68	1.43	2.02	6.85	7.43	.....	1.77	2.02	.....	2.27	2.43	.....
11	1.68	2.35	1.85	6.10	9.85	.....	1.77	1.68	2.18	2.10	2.43	3.85
12	1.52	.....	.....	6.60	10.60	4.85	1.77	1.60	2.02	2.02	.....	3.60
13	1.52	4.10	4.27	7.43	10.68	3.85	1.77	.....	1.93	1.85	2.35	3.60
14	1.52	3.85	6.43	6.85	.....	3.18	1.60	1.60	1.85	2.02	2.27	3.35
15	.....	3.85	6.10	6.68	8.52	2.85	1.52	1.52	1.85	7.10	2.35	3.10
16	1.43	4.10	5.27	.....	7.43	3.18	.....	1.52	2.43	4.43	2.10	3.43
17	1.43	3.77	5.27	4.60	10.98*	2.85	1.52	1.52	.....	3.35	2.10	.....
18	1.43	3.60	5.27	4.27	10.35	.....	1.60	1.52	3.60	3.02	2.10	3.85
19	1.43	.....	.....	4.10	7.68	2.52	1.68	1.93	3.10	2.85	.....	3.60
20	1.43	3.52	4.85	4.27	6.85	2.85	1.52	.....	2.85	2.60	2.18	3.52
21	1.43	2.85	4.60	4.43	.....	2.52	1.52	1.93	2.52	2.52	2.02	3.43
22	.....	3.10	4.43	4.10	6.85	2.18	1.52	1.85	2.35	.....	2.10	3.43
23	1.43	2.68	4.27	.....	6.02	2.10	.....	2.18	2.35	2.43	2.85	3.35
24	1.43	2.43	4.02	4.68	6.60	2.60	1.85	2.02	.....	5.48†	2.60	.....
25	1.43	2.10	4.10	5.52	5.35	.....	1.77	4.10	2.10	6.60	2.27	3.10
26	1.43	.....	.....	4.85	4.85	2.68	1.60	3.60	2.10	4.43	.....	3.60
27	1.43	2.10	4.60	5.35	4.35	2.43	1.60	.....	2.43	3.60	2.10	3.35
28	1.43	2.10	4.43	4.60	.....	2.35	1.68	2.43	2.27	7.76‡	2.35	3.35
29	.....	.....	4.02	5.85	3.85	2.18	1.68	2.27	2.10	7.43	5.35	3.18
30	1.43	.....	4.10	.....	3.60	2.10	.....	7.43	2.10	5.10	4.85	3.10
31	1.43	.....	3.85	.....	3.52	.....	1.60	4.10	.....	4.10	.....	.....

* Highest for day, 13.60.

† Highest for day, 8.10.

‡ Highest for day, 10.10.

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET RIVER, AT PLYMOUTH, N. H., FOR 1894.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.10	3.10	3.18	. . .	4.68	4.68	.....	1.52	1.43	1.68	3.60	2.85
2	3.10	3.10	3.10	4.60	5.60	4.60	2.43	1.52	.....	1.68	3.43	.....
3	3.10	3.10	3.35	3.68	6.10	7.10	2.43	1.60	1.43	1.68	2.85	2.68
4	3.02	.....	.....	3.60	5.18	5.35	2.68	1.85	1.43	1.68	6.10	2.68
5	3.10	3.10	3.50	3.43	4.52	4.43	2.52	.....	1.43	1.85	4.43	2.68
6	3.43	3.10	3.85	3.68	.....	4.18	2.52	1.52	1.43	1.85	3.85	2.68
7	.....	3.10	5.10	3.60	4.68	3.93	2.68	1.52	1.43	.....	3.27	2.68
8	3.35	3.10	7.52	.....	4.68	3.60	.....	1.43	1.43	1.68	3.10	2.43
9	3.29	3.10	7.43	3.35	4.60	3.35	2.52	1.43	.....	1.68	2.85	.....
10	3.10	3.10	6.60	3.35	3.68	.....	2.43	1.43	1.43	1.85	25.77	2.27
11	3.10	.....	.....	3.35	3.27	2.85	2.27	1.43	5.93	3.60	.....	2.35
12	3.02	3.10	6.68	3.10	3.18	2.52	2.18	.....	2.93	3.18	2.60	2.35
13	2.85	3.10	7.10	3.43	.....	2.60	2.10	1.60	2.18	2.85	2.35	5.60
14	.....	3.10	6.35	3.68	2.85	2.52	2.35	1.52	1.93	4.60	2.60	6.18
15	2.85	3.10	5.85	.....	2.85	2.43	.....	1.52	1.68	3.85	2.52	4.85
16	3.10	3.10	5.18	4.85	2.68	2.35	2.27	1.60	.....	3.10	2.35	.....
17	3.10	3.10	5.02	5.43	2.60	.....	2.10	1.60	1.60	2.85	2.43	4.10
18	3.10	.....	.....	6.10	2.52	2.27	2.02	1.60	1.52	3.10	.....	3.60
19	3.10	3.43	4.02	6.43	2.77	3.10	1.85	.....	1.43	2.77	2.60	3.43
20	3.10	3.60	7.02	7.10	.....	4.43	1.77	1.68	1.52	2.52	2.10	3.60
21	.....	3.60	5.60	8.43	3.43	3.18	1.68	1.68	6.02	.....	2.27	3.85
22	3.10	3.43	4.85	13.10	3.10	3.18	.....	1.60	3.60	2.35	2.43	3.68
23	3.10	3.43	5.18	10.10	2.85	2.85	1.68	1.52	.....	2.27	2.35	.....
24	3.10	3.10	4.52	8.60	2.85	.....	1.68	1.52	2.35	2.18	2.43	2.02
25	3.27	.....	.....	7.35	3.10	2.43	1.85	1.43	2.18	2.18	.....	3.10
26	3.77	2.93	3.85	6.43	4.18	2.27	1.77	.....	2.02	2.10	2.35	3.10
27	3.77	3.10	3.43	5.85	.....	2.52	1.68	1.43	1.93	2.10	2.10	3.02
28	.....	3.27	3.35	6.10	3.35	2.43	1.60	1.43	1.85	.....	2.27	3.02
29	3.35	.....	3.10	.....	11.27	2.60	.....	1.43	1.85	2.10	2.60	2.85
30	3.35	.....	3.10	4.93	9.60	2.52	1.52	1.43	.....	2.02	2.68	.....
31	.....	.....	3.10	.....	5.60	.....	1.52	1.43	.....	2.02	.....	3.10

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1895.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.10	2.77	2.43	2.10	6.02	3.18	2.52	2.35	.....	4.18	2.35	.....
2	3.10	2.68	2.43	2.10	5.27	.....	2.35	2.16	2.35	2.93	3.85	3.43
3	3.10	.....	.....	2.10	5.18	2.85	2.35	2.10	2.10	2.43	.....	7.35
4	2.85	2.68	2.52	2.18	6.10	2.27	2.27	.....	1.93	2.27	2.68	4.60
5	2.85	2.68	2.52	2.10	.....	3.02	2.10	2.85	1.85	2.18	2.52	4.18
6	.....	2.60	2.43	2.10	5.35	3.16	2.02	2.52	1.85	.....	2.60	3.85
7	2.85	2.60	2.43	.....	5.43	3.85	.....	2.18	1.77	2.02	2.60	3.52
8	2.85	2.43	2.43	2.85	4.85	3.27	2.27	2.10	.....	2.02	2.93	.....
9	2.85	2.43	2.43	5.68	4.93	.....	2.10	2.10	1.77	2.10	3.10	3.35
10	2.85	.....	.....	13.52	4.43	2.77	2.18	1.93	1.77	2.02	6.60	3.60
11	2.85	2.43	2.43	8.35	3.10	2.60	2.18	.....	1.68	1.93	5.18	4.35
12	3.18	2.52	2.43	5.85	.....	2.52	2.02	1.85	1.93	1.93	4.02	4.85
13	.....	2.52	2.43	5.35	7.10	2.43	1.93	3.18	2.60	.....	2.43	4.85
14	3.60	2.52	2.43	20.10	4.85	3.18	.....	2.35	2.02	4.27	3.18	4.43
15	3.43	2.52	2.27	25.10	4.27	3.10	2.18	2.18	.....	4.02	3.02	.....
16	3.27	2.52	2.27	10.81	4.02	.....	2.10	2.02	1.77	3.10	5.35	4.18
17	3.18	.....	.....	7.85	4.02	2.52	2.10	1.85	1.85	2.77	.....	3.68
18	3.10	2.52	2.10	7.85	3.60	2.35	2.02	.....	1.85	2.68	3.85	3.43
19	2.02	2.52	2.10	7.85	.....	2.27	1.93	3.10	1.77	2.52	3.43	3.43
20	.....	2.52	2.10	7.85	3.27	2.27	1.85	2.43	1.77	.....	3.43	3.60
21	2.85	2.52	2.10	.....	3.10	2.10	.....	2.18	1.77	2.35	5.18	3.60
22	2.85	2.52	2.10	7.35	3.02	2.35	1.77	2.02	.....	2.27	4.10	10.10
23	2.85	2.43	2.10	7.10	2.85	.....	1.85	1.93	1.68	2.27	3.60	6.60
24	2.85	.....	.....	6.60	2.77	2.93	1.68	1.85	1.68	2.18	.....	4.68
25	2.85	2.43	2.10	6.10	2.68	2.93	1.68	.....	1.68	2.18	3.85	4.10
26	2.68	2.43	2.10	7.10	.....	2.43	1.68	1.77	1.68	2.10	3.68	3.68
27	.....	2.43	2.10	6.10	2.60	2.60	1.68	1.77	1.60	.....	11.10	*7.64
28	2.85	2.35	2.10	.....	3.85	2.60	.....	1.77	1.60	2.02	6.60	6.85
29	2.85	.....	2.10	5.43	4.60	2.93	2.60	1.85	.....	2.10	5.10	.....
30	2.85	.....	2.10	5.35	3.93	.....	2.27	2.62	2.18	2.10	4.43	4.10
31	2.85	.....	.....	.....	3.43	.....	2.18	2.35	.....	2.10	.....	†10.02

* Highest for day, 10.43.

† Highest for day, 13.60.

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1896.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.94	2.85	21.10	5.18	4.35	3.27	1.77	2.10	1.85	3.43	.....	4.52
2	5.35	.....	15.85	4.85	4.18	2.93	1.77	.....	1.85	2.85	3.18	3.85
3	4.77	2.85	7.43	4.10	.....	2.77	1.68	2.02	1.85	3.10	3.10	3.35
4	4.18	2.85	5.35	3.85	4.60	2.60	1.60	2.02	1.93	.....	2.85	3.10
5	.....	2.85	5.60	.....	4.60	2.43	.....	1.85	2.43	2.60	2.93	3.43
6	4.60	2.85	6.60	3.35	4.68	2.35	2.68	2.52	.....	2.43	13.60	.....
7	4.52	5.98*	6.35	3.35	4.10	.....	2.18	2.93	7.10	2.35	7.85	3.35
8	4.35	5.77	.....	3.10	3.85	2.60	2.10	2.68	4.10	2.68	.....	3.10
9	4.35	.....	5.35	3.35	3.60	3.10	2.18	.....	3.18	3.02	5.52	2.93
10	4.35	3.60	4.35	4.35	.....	3.68	2.02	2.10	2.85	2.68	4.52	3.10
11	4.35	4.10	3.85	4.43	3.85	3.68	1.85	2.02	2.68	.....	4.10	3.10
12	.....	3.85	3.85	.....	3.85	3.18	.....	1.93	2.43	2.43	3.85	3.18
13	3.68	3.85	3.60	6.60	3.43	3.10	1.68	1.85	.....	2.35	3.85	.....
14	3.85	3.85	3.60	10.68	3.18	.....	1.68	1.77	4.10	2.93	3.85	2.85
15	3.85	3.60	.....	8.85	3.10	2.60	1.68	2.52	3.18	5.77	.....	2.85
16	3.68	.....	3.43	12.10	2.93	2.68	1.68	.....	2.77	4.10	3.35	2.43
17	3.68	3.35	3.43	13.10	.....	2.52	1.68	2.10	2.52	3.43	3.27	2.60
18	3.52	3.35	3.35	11.85	2.77	2.43	1.68	2.60	2.85	.....	3.10	2.52
19	.....	3.18	3.27	.....	2.77	2.43	.....	2.18	3.02	3.10	3.18	2.52
20	3.35	3.18	3.68	10.10	2.77	2.43	1.60	2.10	6.60	3.10	3.10	.....
21	3.55	3.18	7.10	9.02	2.77	.....	5.27	1.93	4.43	3.10	3.10	2.35
22	3.18	3.10	.....	7.10	2.60	2.10	3.77	1.85	3.43	9.60	.....	2.60
23	3.10	.....	4.43	6.60	2.60	2.18	2.85	.....	3.10	5.60	3.10	2.60
24	3.10	3.10	3.85	5.52	.....	2.02	2.52	3.35	2.85	4.68	3.02	2.52
25	2.85	3.10	3.60	5.35	2.43	1.93	2.35	2.85	2.68	.....	3.10	2.27
26	.....	3.10	3.52	.....	2.43	2.02	.....	2.43	2.60	4.27	3.10	2.27
27	3.10	3.10	4.35	4.68	2.85	1.85	2.02	2.10	.....	4.02	3.35	.....
28	3.10	3.10	5.52	4.85	2.68	.....	2.10	2.10	2.35	3.68	3.50	2.35
29	2.93	3.10	.....	4.60	2.60	1.77	2.27	2.10	2.35	3.43	.....	2.35
30	2.85	.....	3.85	4.85	3.35	1.77	2.10	.....	2.35	3.68	3.60	2.35
31	2.85	.....	4.60	.....	.....	.....	2.10	1.85	.....	3.60	.....	2.35

* Highest for day, 7.10.

**MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1897.**

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.35	2.85	2.85	4.43	7.10	3.85	5.10	.....	2.02	1.68	1.68	3.60
2	2.35	2.85	2.85	4.85	.....	3.43	3.85	3.10	1.93	1.68	2.18	3.43
3	.....	2.85	3.02	5.60	6.43	3.35	3.35	2.93	1.85	.....	6.85	3.18
4	2.10	2.85	3.10	.....	6.85	3.43	.....	2.68	1.85	1.52	4.43	3.10
5	2.52	2.85	3.10	4.60	6.60	4.10	2.85	2.68	.....	1.60	3.52	.....
6	6.43	2.85	3.35	5.85	6.02	.....	2.68	2.60	1.85	1.60	3.10	5.60
7	7.10	.....	.....	7.10	5.35	3.85	4.43	2.60	1.77	1.60	.....	4.35
8	6.10	5.35	3.52	7.10	4.52	3.43	3.35	.....	1.77	1.52	2.85	4.10
9	5.10	6.27	3.52	6.43	.....	3.35	3.10	2.35	1.68	1.52	2.68	4.10
10	.....	4.85	3.43	5.35	4.10	10.64*	2.52	2.60	1.77	.....	4.60	3.85
11	4.85	4.27	3.52	.....	4.85	10.10	.....	2.43	1.60	1.52	3.68	3.60
12	4.68	3.85	4.10	4.18	4.52	6.60	2.52	2.60	.....	1.60	3.18	.....
13	4.27	3.60	4.52	4.68	6.68	.....	3.85	2.52	1.68	4.60	3.18	6.10
14	3.43	.....	.....	4.68	14.85	5.10	14.10	2.43	1.68	2.85	.....	4.35
15	3.13	3.52	3.85	5.93	8.10	4.85	18.85	.....	1.68	2.35	2.68	8.85
16	3.35	3.35	3.60	9.60	.....	4.35	8.68	2.10	1.68	2.18	2.77	12.10
17	.....	3.35	3.35	9.10	5.18	3.85	6.43	2.60	1.68	.....	4.52	7.10
18	3.35	3.10	3.43	.....	4.60	3.60	.....	3.35	1.68	2.43	4.10	5.43
19	3.35	3.18	3.43	7.35	4.42	3.35	4.60	2.85	.....	2.35	3.43	.....
20	2.85	3.10	3.85	7.10	3.85	.....	4.10	2.60	1.68	2.02	3.27	3.43
21	2.60	.....	.....	5.68	3.60	4.43	3.85	2.68	2.02	2.02	.....	5.85
22	2.60	3.10	3.77	5.18	3.85	3.68	3.85	.....	2.18	1.85	3.35	5.60
23	2.85	3.10	4.10	5.85	.....	3.35	4.93	2.35	2.02	1.85	2.85	5.60
24	.....	3.10	5.85	8.60	3.35	3.10	6.02	2.10	1.85	.....	2.60	5.43
25	2.85	3.18	5.35	.....	3.85	5.35	.....	2.35	1.85	1.77	2.43	5.10
26	2.85	3.18	4.85	10.85	6.10	3.68	6.10	2.68	.....	1.77	2.35	.....
27	2.85	3.18	4.35	8.85	4.60	.....	4.68	2.85	1.85	1.68	6.44†	5.10
28	2.85	.....	.....	6.60	4.85	2.85	4.02	2.43	2.02	1.68	.....	4.85
29	2.85	.....	3.60	6.10	5.68	2.85	3.35	.....	1.85	1.68	4.60	4.68
30	2.85	.....	3.77	5.93	.....	2.85	3.60	2.10	1.68	1.68	4.27	4.35
31	.....	.....	4.35	.....	4.43	.....	3.35	2.10	.....	.....	.....	4.35

* Highest for day, 12.43.

† Highest for day, 7.52.

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1898.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.10	2.68	2.68	5.85	.....	3.85	2.52	1.43	1.60	2.02	3.18	2.85
2	.....	2.68	2.68	5.10	5.27	3.60	2.43	1.68	1.52	.....	3.02	3.02
3	3.68	2.52	2.68	.....	5.18	3.43	.....	2.10	1.52	1.85	2.85	2.85
4	3.43	2.52	2.68	3.93	4.93	3.18	2.35	1.85	.....	1.85	2.68	.....
5	3.10	2.52	2.68	4.10	4.85	.....	2.10	1.85	1.68	1.93	2.60	2.60
6	3.10	.....	.....	3.85	5.18	3.02	2.10	2.52	1.77	2.10	.....	2.93
7	3.10	2.52	2.68	3.77	5.02	2.85	2.10	.....	1.68	2.27	2.85	2.85
8	3.10	2.52	2.68	3.60	.....	2.85	1.93	1.85	1.93	2.10	2.85	25.17
9	.....	2.60	2.85	3.85	4.60	2.85	1.93	1.85	2.02	.....	2.60	2.43
10	3.10	2.60	2.85	.....	4.35	3.18	.....	1.85	1.77	2.18	2.52	2.35
11	3.10	2.85	2.85	4.68	4.35	2.77	1.85	1.68	.....	2.02	4.10	.....
12	3.10	2.85	3.43	5.60	5.52	.....	1.85	1.68	1.52	1.93	4.42	2.60
13	3.43	.....	.....	6.68	11.10	3.68	1.77	1.60	1.52	2.02	.....	2.43
14	4.60	3.10	7.85	6.85	6.85	3.85	1.77	.....	1.52	2.02	3.27	2.43
15	4.52	3.35	7.10	6.85	....	5.85	1.68	1.52	1.43	2.10	3.27	2.43
16	.....	3.10	6.10	6.85	5.35	3.35	1.68	1.52	1.43	.....	3.10	2.60
17	3.85	2.85	4.68	.....	4.85	3.35	.....	1.52	1.43	2.77	3.18	2.60
18	3.60	2.68	4.85	7.10	4.85	3.27	1.60	1.52	.....	2.43	3.18	.....
19	3.35	2.68	5.10	6.60	4.60	.....	1.60	1.60	1.43	2.35	3.68	2.60
20	3.35	.....	.....	5.68	5.10	5.85	1.60	2.68	1.43	2.52	.....	2.60
21	3.35	2.68	9.10	5.43	5.35	4.43	1.77	.....	1.43	3.18	5.18	2.60
22	3.35	2.68	6.43	5.35	.....	4.02	2.10	1.85	1.43	3.10	4.27	2.60
23	.....	2.68	5.35	5.10	4.43	4.68	1.85	7.93	1.52	.....	3.68	2.85
24	3.10	2.68	6.10	.....	4.43	3.85	.....	2.02	3.18	4.43	3.43	4.60
25	3.10	2.68	5.35	9.68	5.60	3.35	1.60	2.27	.....	3.02	3.35	.....
26	3.10	2.68	5.52	8.52	5.85	.....	1.60	2.35	3.10	2.85	3.10	3.35
27	3.10	.....	.....	6.60	5.18	3.02	1.60	2.10	2.60	7.85*	.....	2.85
28	2.85	2.68	6.85	5.85	5.35	2.85	1.60	.....	2.68	6.10	2.85	2.85
29	2.85	.....	6.60	5.35	.....	2.68	1.52	1.77	2.43	4.43	2.85	2.85
30	....	.....	7.68	5.10	4.43	2.60	1.52	1.60	2.18	.....	2.85	2.85
31	2.68	.....	7.10	.....	4.10	.....	.....	1.60	.....	3.43	.....	2.85

* Highest per day, 9.43.

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1899.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	2.60	3.10	4.85	11.10	2.85	1.77	1.68	1.43	.....	2.68	2.02
2	3.10	2.60	3.43	.....	11.93	2.68	.....	1.68	1.35	1.85	5.18	1.93
3	3.10	2.60	3.43	4.27	11.10	2.52	1.60	2.27	.....	1.77	3.60	.....
4	2.85	2.60	3.35	3.85	8.60	.....	1.60	2.27	1.60	1.60	2.94	2.60
5	2.85	.....	.....	3.85	6.68	2.35	1.60	1.85	1.43	1.60	.....	2.85
6	2.85	2.60	3.85	3.85	6.10	2.35	1.60	.....	1.43	1.60	2.68	2.43
7	2.85	2.60	4.43	4.27	.....	2.18	1.60	1.77	1.27	1.52	2.60	2.43
8	.....	2.60	3.52	4.60	6.18	2.18	2.10	1.60	1.27	.....	2.43	2.35
9	2.85	2.60	3.93	.....	5.43	2.18	.....	1.60	1.27	1.52	2.28	2.35
10	2.85	2.60	3.77	5.68	5.43	2.10	2.77	1.52	.....	1.52	2.18	.....
11	2.60	2.43	3.60	5.43	4.84	.....	2.52	1.60	1.27	1.43	2.18	2.27
12	2.60	.....	.....	4.85	4.84	1.85	2.10	1.68	1.27	1.43	.....	2.27
13	2.60	2.43	4.10	4.18	4.84	1.85	1.93	.....	1.27	1.43	1.60	8.27
14	2.60	2.27	5.85	4.68	.....	1.85	1.85	1.77	1.27	1.43	1.68	4.60
15	.....	2.43	5.35	6.43	4.18	1.85	1.68	1.68	1.27	.....	1.93	3.60
16	3.35	2.43	4.60	7.10	3.84	3.18	.....	1.52	1.27	1.35	2.10	3.10
17	3.10	2.43	4.27	6.27	3.27	2.93	1.77	1.43	.....	1.35	2.10	.....
18	3.10	2.43	3.85	6.60	3.27	.....	2.10	1.43	1.27	1.43	2.10	2.93
19	2.85	.....	.....	7.35	3.35	2.10	1.93	1.43	1.27	1.60	.....	2.93
20	2.85	2.60	4.10	8.85	3.85	2.02	1.77	.....	1.35	1.86	2.27	4.85
21	2.60	2.60	3.85	6.85	.....	2.27	1.77	1.43	1.43	1.77	2.68	4.10
22	.....	2.77	3.85	7.10	3.35	2.02	1.77	1.35	1.68	.....	2.43	3.60
23	2.60	2.85	3.85	8.43	3.27	1.93	.....	1.43	1.60	1.60	2.43	3.18
24	2.60	2.85	3.85	10.60	3.18	1.85	2.02	1.43	.....	1.60	2.43	.....
25	2.60	2.85	3.68	10.10	3.02	.....	1.85	1.43	1.52	1.52	2.35	2.93
26	2.60	.....	.....	10.43	3.02	1.85	1.77	1.43	1.52	1.52	.....	2.93
27	2.60	2.85	3.68	11.35	2.93	1.85	2.35	.....	2.77	1.52	2.10	2.60
28	2.60	3.10	3.68	9.68	.....	1.77	2.18	1.43	2.52	1.77	2.10	2.43
29	.....	.....	3.93	9.85	3.43	1.85	1.85	1.43	2.10	.....	2.10	2.43
30	2.60	.....	5.60	9.60	3.10	1.93	.....	1.43	1.85	4.35	2.02	2.43
31	2.60	.....	5.43	.....	3.02	.....	1.77	1.43	.....	3.02	.....	.....

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1900.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.10	3.35	9.10	.....	8.02	3.68	.....	1.60	1.44	1.94	1.86	3.43
2	2.10	3.43	9.93	8.02	6.10	3.52	1.85	1.60	.....	1.85	1.85	.....
3	2.10	3.43	11.10	8.27	5.35	.....	1.77	1.60	1.43	1.77	1.85	3.10
4	2.10	.....	.....	8.35	8.52	3.60	1.77	1.60	1.43	1.68	.....	3.02
5	2.35	3.43	9.52	8.10	6.18	3.35	1.68	.....	1.43	1.68	1.85	4.10
6	2.35	3.85	8.85	7.52	.....	7.18	1.68	1.52	1.44	1.77	1.78	3.10
7	.....	4.10	8.35	7.52	4.78	3.02	1.60	1.52	1.44	.....	1.77	3.27
8	2.10	3.93	8.35	.....	4.52	2.86	.....	1.60	1.43	1.93	2.18	2.94
9	2.10	3.93	8.27	5.27	4.85	2.94	1.68	1.68	.....	3.68	7.43	.....
10	2.10	4.18	8.27	4.35	5.60	.....	1.68	1.68	1.43	2.77	7.85	2.68
11	2.10	.....	.....	4.18	4.52	2.60	1.68	1.60	1.52	5.60	.....	2.60
12	2.10	3.94	7.93	4.94	4.27	2.60	1.60	.....	1.44	4.18	4.18	2.77
13	2.18	4.10	7.93	4.52	.....	2.43	1.77	1.68	1.43	3.27	3.85	2.77
14	.....	19.10	7.85	4.93	5.02	2.44	1.94	1.60	1.36	.....	3.60	2.68
15	2.27	10.10	7.77	.....	6.35	3.02	.....	2.85	1.43	2.77	3.27	2.35
16	2.27	8.27	7.68	5.94	8.27	2.60	1.77	2.02	.....	3.02	3.10	.....
17	2.27	7.60	7.60	7.10	5.68	.....	1.77	2.27	1.36	2.85	2.85	2.43
18	2.27	.....	.....	8.52	5.27	2.27	1.78	2.27	1.36	2.77	.....	2.43
19	2.27	8.77	7.35	11.43	4.94	2.10	1.68	.....	1.36	2.60	2.77	2.60
20	2.27	8.77	7.52	13.60	10.43	2.27	1.68	1.93	1.43	2.52	4.18	2.60
21	7.10	8.60	7.52	11.68	6.93	2.02	1.68	1.85	1.44	.....	6.10	2.52
22	5.68	8.60	7.43	.....	5.68	1.93	.....	1.77	2.60	2.27	6.93	2.52
23	5.02	8.60	7.43	10.60	5.10	2.10	1.68	1.68	.....	2.18	4.85	.....
24	4.10	8.44	8.10	10.68	4.93	.....	1.60	1.68	1.85	2.10	4.27	2.68
25	3.85	.....	.....	9.35	4.86	1.93	1.60	1.68	1.78	2.52	.....	5.93
26	3.77	11.35	7.93	7.77	4.60	1.93	3.10	.....	1.68	2.35	4.68	4.85
27	3.60	9.85	7.93	6.93	.....	1.85	2.27	1.68	1.68	2.27	5.77	4.68
28	.....	9.35	7.93	5.77	4.27	1.68	1.94	1.52	2.43	.....	4.85	4.68
29	3.35	.....	7.93	.....	3.85	1.77	.....	1.52	2.10	2.02	4.10	4.52
30	3.27	.....	7.60	6.02	3.63	1.77	1.68	1.52	.....	1.93	3.77	.....
31	3.43	.....	7.60	.....	3.60	.....	1.68	1.44	.....	1.93	.....	3.43

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1901.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.27	2.27	2.35	4.10	5.77	4.93	2.10	3.10	.....	1.93	2.10	.....
2	3.43	2.35	2.35	4.10	5.52	....	2.02	2.85	1.85	1.85	2.02	2.10
3	3.43	.....	.....	4.85	5.18	4.35	2.02	2.52	1.77	1.77	.....	2.02
4	3.44	2.35	2.10	8.10	4.85	4.68	1.93	.....	1.85	1.85	1.93	1.93
5	3.43	2.27	2.27	7.43	.....	4.18	1.93	2.77	1.78	1.85	1.93	1.93
6	.....	2.10	2.18	6.18	4.10	3.85	6.02	2.27	1.77	.....	1.93	1.86
7	3.10	2.10	2.18	9.10	3.85	3.52	.....	2.60	1.68	1.77	1.85	1.85
8	2.93	2.18	2.27	11.06	4.35	3.77	2.60	7.10	.....	1.68	1.85	.....
9	2.85	2.18	2.27	8.78	4.68	.....	2.27	4.27	1.60	1.85	1.93	2.10
10	2.77	.....	.....	7.52	4.52	3.85	2.27	3.93	1.60	1.78	.....	2.60
11	2.68	2.18	2.85	7.18	6.56*	3.60	2.10	.....	1.60	1.68	1.77	4.85
12	2.68	2.27	3.35	6.85	.....	3.27	2.10	3.10	1.60	1.68	1.93	4.43
13	.....	2.27	3.18	6.68	6.10	3.10	2.02	2.93	1.68	.....	2.60	3.85
14	2.77	2.35	3.10	.....	5.52	2.85	.....	2.85	1.85	2.10	2.35	3.35
15	2.68	2.35	3.10	7.35	4.77	2.77	1.94	2.68	.....	5.60	2.27	.....
16	2.60	2.35	3.10	6.85	4.35	.....	1.93	3.85	2.02	4.52	2.18	15.60
17	2.77	.....	.....	6.27	3.85	2.52	1.93	3.77	2.10	3.68	.....	6.60
18	2.85	2.27	3.02	7.35	3.77	2.35	2.60	.....	2.10	3.10	2.02	4.10
19	3.43	2.27	2.93	6.60	.....	2.27	3.02	2.68	2.02	2.77	1.94	4.10
20	.....	2.27	2.93	6.52	10.10	2.35	2.52	2.43	1.94	.....	2.10	3.93
21	3.52	2.18	3.10	.....	7.27	2.27	.....	2.35	1.93	2.68	2.10	3.85
22	3.43	2.18	5.22	9.43	5.35	2.27	2.18	2.27	.....	2.60	2.02	.....
23	3.27	2.18	7.10	10.35	4.77	.....	2.02	2.27	1.85	2.35	2.02	4.02
24	3.10	.....	.....	8.68	4.77	2.60	1.93	2.18	1.78	2.27	.....	4.02
25	2.85	2.27	5.60	7.52	5.85	2.77	1.93	.....	1.77	2.60	2.27	4.27
26	2.85	2.27	5.68	6.93	.....	2.35	1.85	2.10	1.77	2.52	2.68	4.18
27	.....	2.43	7.43	6.10	.....	2.35	1.85	2.10	1.68	.....	2.35	3.93
28	2.68	2.43	9.52	.....	6.60	2.18	.....	2.02	1.68	2.27	2.18	3.60
29	2.60	.....	7.10	5.85	6.93	2.10	3.60	1.93	.....	2.18	2.18	.....
30	2.60	.....	6.18	6.60	6.10	.....	3.27	1.93	1.85	2.18	2.10	5.60
31	2.35	.....	.....	.....	5.18	.....	4.60	1.85	.....	2.10	.....	4.85

*Highest for day, 8.10.

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1902.

Day.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
1	4.27	4.93	8.60	7.85	10.10	.....	3.43	2.43	2.02	3.60	4.43	2.77
2	3.93	.....	.....	6.35	7.77	3.10	3.85	2.27	2.02	3.52	.....	2.77
3	3.60	4.43	18.10	6.68	6.27	4.18	3.68	.....	2.02	3.35	4.18	2.78
4	3.68	3.85	11.27	5.27	.....	4.02	5.18	2.27	1.93	3.10	3.93	2.77
5	.....	3.77	6.10	4.77	5.52	4.10	4.43	2.43	2.43	.....	3.85	2.68
6	3.77	3.60	5.35	.....	6.10	3.35	.....	2.27	2.35	3.10	3.68	2.68
7	3.77	3.60	4.60	4.27	5.93	3.68	3.60	2.60	.....	4.77	3.60	.....
8	3.68	3.52	4.18	4.18	5.60	.....	3.35	2.52	2.52	3.77	3.52	2.68
9	3.68	.....	.....	4.10	5.10	5.02	3.10	2.68	2.52	3.35	.....	2.60
10	3.68	3.43	3.02	7.10	4.43	4.27	3.02	.....	6.10	3.18	3.18	2.60
11	3.68	3.27	3.85	5.68	.....	3.93	3.35	2.43	4.60	3.18	3.18	2.60
12	.....	3.18	3.60	5.18	3.77	3.60	3.18	3.10	3.18	.....	3.10	2.52
13	3.52	3.18	6.43	.....	3.10	3.52	.....	3.35	2.85	3.02	3.18	2.52
14	3.43	3.18	7.60	4.85	3.10	3.52	2.93	3.02	.....	3.02	3.77	.....
15	3.36	3.10	5.93	4.43	2.93	.....	3.85	3.18	3.93	2.93	3.60	2.52
16	3.35	.....	.....	4.10	2.77	3.43	3.60	2.68	3.35	2.93	.....	2.44
17	3.27	3.10	7.27	4.10	2.27	7.10	3.35	.....	3.18	2.85	3.43	4.68
18	3.18	3.10	9.68	4.10	.....	4.85	3.18	2.43	2.85	2.68	3.35	7.10
19	.....	3.10	6.02	4.02	1.93	4.27	3.10	3.35	2.52	.....	3.27	5.02
20	3.02	3.02	5.18	.....	3.10	3.68	.....	3.35	3.93	5.43	3.18	4.60
21	3.02	2.93	5.18	4.35	3.10	3.43	3.68	2.27	.....	4.60	3.18	.....
22	3.43	2.93	6.10	4.52	3.02	.....	3.52	2.77	3.43	4.10	3.18	5.18
23	9.52	.....	.....	5.18	2.77	3.85	3.85	2.60	2.93	3.68	.....	4.85
24	6.10	2.93	6.43	6.27	2.68	3.35	3.77	.....	2.77	3.43	3.10	7.43
25	4.60	2.85	5.35	5.10	.....	3.18	3.77	2.27	2.60	3.35	2.93	5.93
26	.....	2.77	5.02	5.68	4.60	4.10	3.27	2.18	2.43	.....	2.94	.....
27	4.85	2.77	4.93	.....	7.10	6.02	.....	2.18	2.35	3.18	2.93	6.02
28	5.10	4.10	4.93	7.10	10.10	4.52	2.93	2.10	.....	9.10	2.93	.....
29	5.02	.....	6.43	5.60	8.60	.....	2.85	2.10	3.52	13.10	2.85	5.77
30	5.18	.....	.....	5.77	6.60	3.43	2.77	2.10	4.02	7.52	.....	5.35
31	5.18	.....	8.52	.....	5.10	.....	2.60	.....	.....	5.35	.....	5.27

**MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1903.**

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.02	.....	.....	7.52	5.52	2.18	2.85	2.43	2.27	1.75	2.20	1.80
2	4.85	4.85	8.43	5.35	4.85	2.10	2.68	.....	2.18	1.62	2.10	1.75
3	4.77	4.77	6.60	5.27	.....	2.10	2.60	2.27	2.18	1.52	2.10	1.70
4	.....	4.77	6.02	6.85	3.85	2.10	2.43	2.18	1.90*	1.45	2.05	1.72
5	4.85	4.68	5.93	.....	4.02	2.02	.....	2.19	1.92	1.62	2.00	1.70
6	4.77	4.60	5.77	5.68	3.77	2.02	2.27	2.18	1.90	1.78	2.35	1.75
7	4.60	4.43	5.68	5.35	3.68	.....	2.27	2.35	2.02	1.98	2.52	1.78
8	4.52	.....	.....	5.35	3.68	2.02	2.18	2.27	2.05	1.82	2.35	1.80
9	4.43	4.43	8.60	6.02	3.93	2.43	2.18	.....	1.90	2.20	2.15	1.75
10	4.43	4.35	11.52	6.10	.....	2.52	2.10	2.18	1.90	2.78	2.05	1.80
11	.....	4.27	12.10	5.18	3.85	2.35	2.10	2.18	1.78	2.40	2.10	1.82
12	4.27	4.10	16.60	.....	3.60	2.36	.....	3.52	1.82	2.20	2.00	1.80
13	4.18	4.27	9.10	4.93	3.60	9.43	2.10	3.35	1.60	2.10	1.98	1.90
14	4.18	5.27	8.52	4.77	3.35	.....	2.10	3.18	1.62	2.10	1.90	2.42
15	4.10	.....	.....	4.68	3.27	5.52	2.02	2.93	1.60	2.00	1.95	2.55
16	4.10	4.85	6.68	4.60	3.27	4.35	1.94	.....	1.52	1.88	1.90	2.48
17	4.10	4.77	5.85	4.60	.....	3.85	1.94	2.68	1.42	1.88	2.02	2.40
18	.....	4.77	6.27	4.43	2.93	3.35	2.18	2.52	1.72	3.65	2.42	2.22
19	4.02	4.68	6.18	.....	2.85	3.35	.....	2.43	2.10	3.65	2.60	2.28
20	3.93	4.60	8.43	2.02	2.85	3.10	2.10	2.43	2.00	2.78	2.45	2.90
21	4.60	4.43	12.18	3.85	2.77	.....	4.93	4.27	1.82	2.58	2.10	6.40
22	4.35	.....	.....	3.77	2.60	8.60	4.02	3.18	1.72	2.48	2.10	7.18
23	4.10	4.35	8.52	3.68	2.52	5.68	3.52	.....	1.65	2.30	2.05	6.52
24	4.10	3.93	10.27	3.60	.....	4.52	3.18	2.52	1.62	2.38	2.15	6.48
25	.....	3.77	10.93	3.43	2.43	3.68	2.93	2.43	1.58	2.30	2.38	6.32
26	4.18	3.68	8.68	.....	2.35	4.02	.....	2.35	1.52	2.12	2.30	6.00
27	4.18	3.60	6.60	3.52	2.10	3.52	2.60	2.35	1.45	2.15	1.90	5.90
28	4.10	4.10	6.27	3.52	2.10	.....	2.52	2.27	1.50	2.05	1.78	5.80
29	4.10	.....	.....	3.35	2.10	3.18	2.85	2.85	1.82	1.95	1.70	5.65
30	4.27	.....	4.93	5.10	2.27	2.93	2.52	.....	1.78	2.10	1.80	5.40
31	4.52	.....	4.68	.....	.....	.....	2.52	2.28	.....	2.10	.....	5.20

* New gage installed on September 4, 1903.
Ice December 21-31.

MEAN DAILY GAGE HEIGHT, IN FEET, OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1904.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.20	3.90	.....	.....	8.85	2.85	2.05	1.78	1.82	5.55	2.82	.....
2	5.15	.....	.....	6.70	7.85	2.80	3.00	1.88	1.90	4.55	2.72	.....
3	.....	.....	.....	.....	6.88	2.62	3.00	1.98	1.72	3.90	2.70	.....
4	4.75	.....	4.65	.....	7.12	2.48	2.55	2.48	2.20	3.50	2.62	.....
5	.....	3.65	.....	6.12	7.30	2.40	2.10	2.00	2.35	3.20	2.55	.....
6	.....	.....	.....	3.42	6.75	2.72	2.06	1.98	1.90	3.05	.....	.....
7	.....	.....	4.60	5.80	5.80	2.98	2.01	1.80	1.90	2.90	.....	.....
8	3.90	4.25	.....	5.50	6.00	3.20	1.85	1.82	1.88	2.88	.....	.....
9	.....	.....	8.60	7.20	5.68	3.15	1.88	1.72	1.80	2.70	.....	.....
10	.....	.....	.....	9.40	6.45	2.78	1.80	1.70	1.80	2.75	.....	.....
11	4.20	.....	.....	7.88	8.25	2.55	1.78	1.70	1.45	2.82	.....	.....
12	.....	3.30	6.70	6.45	6.45	2.35	1.72	2.10	1.80	2.95	.....	.....
13	.....	.....	.....	5.55	5.28	2.32	1.82	2.05	1.62	2.82	.....	.....
14	.....	.....	6.65	4.78	4.82	2.25	1.92	1.85	1.62	2.88	.....	.....
15	4.40	4.10	.....	4.48	4.70	2.15	1.82	1.80	4.65	2.72	.....	.....
16	.....	.....	.....	4.18	8.02	2.00	1.72	2.05	4.82	2.60	.....	.....
17	.....	.....	.....	3.95	9.90	1.88	1.70	1.98	3.40	2.50	.....	.....
18	4.30	.....	.....	3.80	6.28	1.95	1.62	1.92	2.95	2.35	.....	.....
19	.....	4.15	4.30	4.05	6.82	1.90	1.68	1.90	2.60	2.50	.....	.....
20	.....	.....	.....	4.28	9.50	1.90	1.60	2.30	2.50	2.35	.....	.....
21	.....	.....	.....	3.92	6.62	1.95	1.62	6.62	2.80	3.20	.....	.....
22	4.10	4.20	5.10	3.92	5.40	2.00	1.58	3.80	2.85	7.88	.....	.....
23	.....	.....	.....	4.32	4.75	2.12	1.52	3.22	2.48	5.60	.....	.....
24	.....	.....	.....	5.25	4.35	2.00	1.45	2.85	2.40	3.88	.....	.....
25	4.20	.....	.....	6.70	3.98	1.98	1.58	2.50	5.30	3.42	.....	.....
26	.....	.....	8.30	7.52	3.80	1.95	1.58	2.32	3.75	3.35	.....	.....
27	.....	4.50	12.45	7.28	3.48	1.90	1.98	2.20	3.72	4.28	.....	.....
28	.....	.....	.....	7.82	3.42	1.88	2.50	2.00	3.20	3.62	.....	.....
29	4.30	4.55	10.00	8.88	3.30	1.92	2.05	1.90	3.00	3.25	.....	.....
30	.....	.....	.....	9.68	3.08	1.98	2.32	1.85	7.22	3.15	.....	.....
31	.....	.....	8.40	.....	2.95	.....	1.85	1.85	.....	2.98	.....	.....

Ice January 1 to April 4.

RATING TABLE FOR PEMIGEWASSET RIVER AT PLY-
MOUTH, N. H., FROM JANUARY 1, 1886, TO DECEM-
BER 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
.....	.....	2.00	340	3.00	1,020	4.00	1,920	5.00	2,980	6.00	4,400
.....	.....	2.10	395	3.10	1,110	4.10	2,020	5.10	3,100	6.10	4,560
.....	.....	2.20	455	3.20	1,200	4.20	2,120	5.20	3,220	6.20	4,720
1.30	124	2.30	515	3.30	1,290	4.30	2,220	5.30	3,350	6.30	4,890
1.40	140	2.40	575	3.40	1,380	4.40	2,320	5.40	3,480	6.40	5,060
1.50	160	2.50	640	3.50	1,470	4.50	2,420	5.50	3,620	6.50	5,230
1.60	185	2.60	710	3.60	1,560	4.60	2,530	5.60	3,770	6.60	5,400
1.70	215	2.70	780	3.70	1,650	4.70	2,640	5.70	3,920	6.70	5,570
1.80	250	2.80	860	3.80	1,740	4.80	2,750	5.80	4,080	6.80	5,750
1.90	290	2.90	940	3.90	1,830	4.90	2,860	5.90	4,240	6.90	5,930

RATING TABLE FOR PEMIGEWASSET RIVER AT PLYMOUTH, N. H.—*Concluded.*

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
7.00	6,110	8.00	7,970	9.00	9,970	10.00	12,050	11.00	14,150	12.00	16,250
7.10	6,290	8.10	8,170	9.10	10,170	.....	.....	.....	.....	.....	.....
7.20	6,470	8.20	8,370	9.20	10,370	10.20	12,470	11.20	14,570	12.20	16,670
7.30	6,650	8.30	8,570	9.30	10,580	.....	.....	.....	.....	.....	.....
7.40	6,830	8.40	8,770	9.40	10,790	10.40	12,890	11.40	14,990	12.40	17,090
7.50	7,020	8.50	8,970	9.50	11,000	.....	.....	.....	.....	.....	.....
7.60	7,210	8.60	9,170	9.60	11,210	10.60	13,310	11.60	15,410	12.60	17,510
7.70	7,400	8.70	9,370	9.70	11,420	.....	.....	.....	.....	.....	.....
7.80	7,590	8.80	9,570	9.80	11,630	10.80	13,730	11.80	15,830	12.80	.....
7.90	7,780	8.90	9,770	9.90	11,840	.....	.....	.....	.....	.....	17,930
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.00	18,850
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14.00	20,450
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15.00	22,550
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16.00	24,650
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17.00	26,750
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18.00	28,850

The above table is applicable only for open channel conditions. It is based upon discharge measurements made between September 4, 1903, and November 1, 1904, and is well defined. It has been applied to the nearest hundredth up to five-foot gage height, to the nearest half tenth from five-foot to nine-foot gage height, and to the nearest tenth to gage heights above nine feet.

ESTIMATED MONTHLY DISCHARGE OF PEMIGEWASSET RIVER AT PLYMOUTH, N. H., FOR 1886 AND 1887.

(Drainage area, 615 square miles.)

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1886.					
April 16-30.....	13,310	2,805	7,247	11.78	6.57
May.....	4,975	1,182	2,334	3.80	4.38
June.....	2,350	593	1,085	1.76	1.96
July.....	1,713	395	551	.90	1.04
August.....	1,407	305	475	.77	.89
September.....	2,896	185	540	.88	.98
October.....	2,070	350	653	1.06	1.22
November 1-15.....	3,770	964	1,828	2.97	1.66
1887.					
April 16-30.....	15,725	2,717	7,295	11.86	6.62
May.....	16,460	2,190	6,871	11.17	12.88
June.....	20,450	766	3,006	4.89	5.46
July.....	8,970	766	2,002	3.26	3.76
August.....	2,020	593	1,040	1.69	1.95
September.....	900	350	565	.92	1.03
October.....	1,263	350	473	.77	.89
November 1-15.....	497	350	413	.67	.37

Sundays interpolated.

ESTIMATED MONTHLY DISCHARGE OF PEMIGEWASSET
RIVER, AT PLYMOUTH, N. H., FOR 1888 AND 1889.

(Drainage area, 615 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1888.							
April 16-30.....	22,760	1,858	5,309	8.64	4.82	.....	.....
May.....	20,135	3,415	8,756	14.24	16.42	.....	.....
June.....	5,400	350	1,867	3.04	3.39	107	3.17
July.....	1,632	350	697	1.13	1.30	82	1.58
August.....	2,020	305	684	1.11	1.28	33	3.91
September.....	7,685	350	1,816	2.95	3.29	41	8.06
October.....	6,290	1,335	2,729	4.44	5.12	99	5.18
November 1-15..	7,020	1,857	3,066	4.99	2.78	.....	5.28
December.....	.....	.....	.....	.....	.....	.....	2.28
The period.....	.....	.....	.....	.....	.....	.....	29.46
1889.							
January.....	.....	.....	.....	.....	.....	.....	4.29
February.....	.....	.....	.....	.....	.....	.....	2.86
March.....	.....	.....	.....	.....	.....	.....	2.24
April 16-30.....	8,870	2,350	5,315	8.64	4.82	.....	1.60
May.....	7,400	964	2,092	3.40	3.92	180	2.21
June.....	11,210	654	2,183	3.55	3.96	86	4.61
July.....	7,495	545	1,700	2.76	3.18	68	4.67
August.....	7,875	350	1,362	2.21	2.55	80	3.17
September.....	7,020	239	1,077	1.75	1.95	42	4.63
October.....	8,670	654	2,018	3.28	3.78	91	4.14
November 1-15..	2,190	1,110	1,548	2.52	1.40	.....	4.66
December.....	.....	.....	.....	.....	.....	.....	5.09
The year.....	.....	.....	.....	.....	.....	.....	44.17

Sundays interpolated.
Rainfall at Plymouth, N. H.

ESTIMATED MONTHLY DISCHARGE OF PEMIGEWASSET
RIVER AT PLYMOUTH, N. H., FOR 1890 AND 1891.

(Drainage area, 615 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1890.							
January							3.85
February.....							4.82
March.....							4.41
April 16-30.....	8,970	3,620	5,714	9.29	5.18		2.19
May.....	17,570	2,270	6,619	10.76	12.41	200	6.24
June	3,770	710	1,690	2.75	3.07	100	2.95
July.....	7,495	395	1,154	1.88	2.17	49	4.46
August	10,685	270	1,671	2.72	3.14	56	5.60
September.....	15,410	900	3,302	5.37	5.99	110	5.63
October.....	7,210	964	2,101	3.42	3.94	80	4.93
November 1-15..	1,857	1,110	1,360	2.21	1.24		2.05
December.....							3.94
The year.....							51.07
1891.							
January							6.09
February							3.35
March.....							3.85
April 16-30.....	15,410	3,100	8,380	13.63	7.60		2.31
May.....	4,560	1,335	2,705	4.40	5.07	220	2.28
June.....	2,350	493	1,190	1.93	2.15	75	2.86
July.....	3,415	305	783	1.27	1.46	26	5.58
August	3,100	270	809	1.32	1.52	29	5.29
September.....	1,335	185	515	.84	.94	76	1.23
October.....	593	165	234	.38	.44	26	1.66
November 1-15..	1,940	145	421	.68	.38		3.26
December.....							5.45
The year.....							43.21

Sundays interpolated.

Rainfall at Plymouth, N. H.

ESTIMATED MONTHLY DISCHARGE OF PEMIGEWASSET
RIVER AT PLYMOUTH, N. H., FOR 1892 AND 1893.

(Drainage area, 615 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1892.							
January.....							5.01
February.....							1.93
March.....							1.67
April 16-30.....	2,618	900	1,467	2.39	1.33		1.04
May.....	7,020	1,407	3,277	5.33	6.13	110	5.53
June.....	10,170	497	2,290	3.72	4.15	61	6.76
July.....	9,670	270	1,695	2.76	3.18	190	1.66
August.....	6,290	185	1,211	1.97	2.27	21	10.85
September.....	9,670	350	1,029	1.67	1.86	170	1.10
October.....	710	327	466	.76	.88	46	1.90
November 1-15..	3,920	545	1,385	2.25	1.25		4.29
December.....							0.95
The year.....							42.69
1893.							
January.....							2.48
February.....							5.73
March.....							2.78
April 16-30.....	5,230	2,020	2,923	4.75	2.65		2.42
May.....	17,195	1,488	7,117	11.57	13.34	290	4.61
June.....	2,805	395	958	1.56	1.74	91	1.92
July.....	395	165	241	.39	.45	20	2.27
August.....	6,925	165	692	1.13	1.30	22	6.01
September.....	1,560	270	619	1.01	1.13	59	1.92
October.....	6,925	270	1,648	2.68	3.09	57	5.46
November 1-15..	1,785	497	864	1.41	.79		2.57
December.....							4.02
The year.....							42.19

Sundays interpolated.

Rainfall at Plymouth, N. H.

ESTIMATED MONTHLY DISCHARGE OF PEMIGEWASSET
RIVER AT PLYMOUTH, N. H., FOR 1894 AND 1895.

(Drainage area, 615 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1894.							
January.....							2.01
February.....							2.75
March.....							1.84
April 16-30.....	18,560	2,805	6,513	10.59	5.91	.....	1.67
May.....	14,675	654	2,519	4.10	4.73	110	4.36
June.....	6,290	497	1,380	2.24	2.50	68	3.70
July.....	766	165	419	.68	.78	32	2.43
August.....	270	145	170	.28	.32	10	3.12
September.....	4,400	145	598	.97	1.08	25	4.32
October.....	2,530	209	635	1.03	1.19	31	3.83
November 1-15.	4,560	545	1,337	2.17	1.21	.....	2.27
December.....							1.88
The year.....							34.18
1895.							
January.....							2.47
February.....							0.30
March.....							1.66
April 16-30.....	13,730	3,415	6,432	10.46	5.84	.....	7.21
May.....	6,290	710	2,313	3.76	4.33	180	2.46
June.....	1,785	395	845	1.37	1.53	41	3.75
July.....	710	209	388	.63	.73	23	3.12
August.....	1,182	239	469	.76	.88	22	3.99
September.....	710	185	294	.48	.54	15	3.53
October.....	2,190	305	677	1.10	1.27	64	2.00
November 1-15.	5,400	545	1,457	2.37	1.32	.....	5.26
December.....							5.52
The year.....							41.27

Sundays interpolated.

Rainfall at Plymouth, N. H.

ESTIMATED MONTHLY DISCHARGE OF PEMIGEWASSET
RIVER AT PLYMOUTH, N. H., FOR 1896 AND 1897.

(Drainage area, 615 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1896.							
January.....							0.39
February.....							5.51
March.....							7.83
April 16-30.....	18,560	2,530	7,986	12.99	7.25		0.94
May.....	2,618	593	1,358	2.21	2.55	150	1.69
June.....	1,632	239	716	1.16	1.29	96	1.34
July.....	3,285	185	497	.81	.93	32	2.92
August.....	1,335	239	493	.80	.92	25	3.61
September.....	6,290	270	1,298	2.11	2.35	42	5.55
October.....	11,210	545	1,738	2.83	3.26	64	5.09
November 1-15..	19,610	900	3,560	5.79	3.23		5.26
December.....							1.07
The year.....							41.20
1897.							
January.....							3.27
February.....							2.79
March.....							3.49
April 16-30.....	13,835	3,220	7,497	12.19	6.80		1.60
May.....	22,235	1,335	4,085	6.64	7.66	167	4.57
June.....	13,415	900	2,658	4.32	4.83	88	5.49
July.....	30,635	654	3,878	6.31	7.27	107	6.77
August.....	1,335	395	698	1.13	1.30	51	2.53
September.....	443	185	259	.42	.47	51	0.92
October.....	2,530	165	363	.59	.68	36	1.87
November 1-15..	5,840	209	1,493	2.43	1.36		5.17
December.....							4.80
The year.....							43.27

Sundays interpolated.
Rainfall at Plymouth, N. H.

ESTIMATED MONTHLY DISCHARGE OF PEMIGEWASSET RIVER AT PLYMOUTH, N. H., FOR 1898 AND 1899.

(Drainage area, 615 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1898.							
January.....							5.38
February.....							3.56
March.....							1.26
April 16-30.....	11,420	3,100	5,395	8.77	4.89		2.83
May.....	14,360	2,020	3,460	5.63	6.49	220	2.90
June.....	4,160	710	1,517	2.47	2.76	95	2.92
July.....	654	156	290	.47	.54	23	2.31
August.....	766	145	302	.49	.56	11	5.29
September.....	1,182	145	341	.55	.61	14	4.47
October.....	7,685	270	1,122	1.82	2.11	53	3.98
November 1-15..	2,340	654	1,147	1.87	1.04		3.64
December.....							1.72
The year.....							40.26
1899.							
January.....							2.83
February.....							2.06
March.....							5.70
April 16-30.....	14,885	4,805	9,448	15.36	8.57		1.77
May.....	16,145	964	3,680	5.98	6.89	590	1.17
June.....	1,182	239	458	.74	.83	30	2.74
July.....	836	185	317	.52	.60	17	3.44
August.....	497	132	197	.32	.37	13	2.87
September.....	836	120	193	.32	.36	12	3.09
October.....	2,270	132	307	.50	.58	33	1.78
November 1-15..	3,220	185	788	1.28	.71		1.54
December.....							1.78
The year.....							30.77

Sundays interpolated.

Rainfall at Plymouth, N. H.

ESTIMATED MONTHLY DISCHARGE OF PEMIGEWASSET
RIVER AT PLYMOUTH, N. H., FOR 1900 AND 1901.

(Drainage area, 615 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1900.							
January							4.86
February.....							6.44
March.....							4.75
April 16-30.....	19,610	4,000	9,870	16.05	9.25		0.65
May.....	12,995	1,560	3,953	6.42	7.40	430	1.72
June.....	6,470	209	900	1.46	1.63	67	2.44
July.....	1,110	185	263	.43	.50	16	3.22
August.....	900	147	250	.41	.47	19	2.42
September.....	710	134	215	.35	.39	24	1.61
October.....	3,770	209	730	1.19	1.37	35	3.94
November 1-15..	7,685	239	1,866	3.03	1.69		6.15
December							0.97
The period.....							39.17
1901.							
January.....							1.52
February.....							0.42
March.....							4.30
April 16-30.....	12,785	4,160	6,706	10.90	6.08		4.48
May.....	12,260	1,713	3,895	6.33	7.30	134	5.44
June.....	2,896	395	1,170	1.90	2.12	121	1.75
July.....	2,530	270	571	.93	1.07	16	6.79
August.....	6,290	270	1,016	1.65	1.90	43	4.37
September.....	395	185	259	.42	.47	19	2.42
October.....	3,770	209	660	1.07	1.23	90	1.37
November 1-15..	710	239	361	.59	.33		1.77
December							6.20
The period.....							41.33

Sundays interpolated.

Rainfall at Plymouth, N. H.

ESTIMATED MONTHLY DISCHARGE OF PEMIGEWASSET RIVER AT PLYMOUTH, N. H., FOR 1902 AND 1903.

(Drainage area, 615 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1902.							
January.....							2.27
February.....							1.83
March.....							4.37
April 16-30.....	6,290	1,940	3,266	5.31	2.96		3.41
May.....	12,260	305	3,377	5.49	6.33	210	3.02
June.....	6,290	1,110	2,044	3.32	3.70	82	4.52
July.....	3,220	710	1,431	2.33	2.69	84	3.20
August.....	1,335	365	696	1.13	1.30	34	3.86
September.....	4,560	305	1,128	1.83	2.04	36	5.72
October.....	18,560	766	2,538	4.13	4.76	110	4.27
November 1-15..	2,350	1,110	1,617	2.63	1.47		1.16
December.....							5.22
1903.							
January.....							3.92
February.....							
March.....							5.29
April 16-30.....	3,100	350	1,729	2.81	1.56		1.33
May.....	3,620	395	1,285	2.09	2.41	1,600	0.15
June.....	10,895	350	2,099	3.41	3.80	60	6.34
July.....	2,896	310	725	1.18	1.36	31	4.44
August.....	2,190	443	758	1.23	1.42	43	3.28
September.....	497	144	264	0.40	0.45	58	0.78
October.....	1,605	149	486	0.79	0.91	26	3.44
November.....	710	215	412	0.67	0.75	50	1.50
December 1-20*.	940	215	376	0.61	0.45		2.53

Sundays interpolated.

Rainfall at Plymouth, N. H.

* Frozen, December 21-31.

ESTIMATED MONTHLY DISCHARGE OF PEMIGEWASSET
RIVER AT PLYMOUTH, N. H., FOR 1904.

(Drainage area, 615 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1904.							
January.....							2.05
February.....							1.32
March.....							2.84
April 5-30*.....	11,420	1,398	4,607	7.49	7.24		5.58
May.....	11,840	980	4,741	7.71	8.89	170	5.14
June.....	1,200	282	537	0.87	0.97	43	2.26
July.....	1,020	149	338	0.55	0.63	15	4.14
August.....	5,400	215	594	0.97	1.12	27	4.18
September.....	6,470	149	1,045	1.70	1.90	30	6.40
October.....	7,780	545	1,523	2.48	2.86	94	3.04

* Ice, December 21, 1903, to April 4, 1904.
Rainfall at Plymouth, N. H.

CONNECTICUT RIVER DRAINAGE BASIN.

Connecticut River has its source in Connecticut Lake, in northern New Hampshire. Its extreme headwaters, however, lie in the province of Quebec and in the mountains on the northern boundary of New Hampshire; thence the river flows in a southerly direction between New Hampshire and Vermont and through Massachusetts and Connecticut into Long Island Sound. The total drainage area is 11,085 square miles, of which 155 square miles lie in the province of Quebec. Its total length from Connecticut Lake to Long Island Sound is 345 miles. On its banks are many cities and towns of importance. It is in general closely followed by one or more railroad lines. Water power is used at several points, notably at Windsor Locks in Connecticut, Holyoke and Turner's Falls in Massachusetts and Bellows Falls and Wilder in Vermont. The valley of Connecticut River proper is very generally in farm lands. Many of its tributary basins, however, especially in the northern portions, are heavily wooded.

DRAINAGE AREA OF CONNECTICUT RIVER AND TRIBUTARIES.

River.	Locality.	Area—square miles.
Connecticut.....	Mouth.....	11,085
Connecticut.....	Hartford, Conn.....	10,235
Connecticut.....	Orford, N. H.....	3,305
Connecticut.....	In Canada.....	155
Ashuelot.....	Winchester, N. H.....	385
White.....	Sharon, Vt.....	680
Ammonoosuc.....	Bretton Woods, N. H.....	34
Zealand.....	Mouth.....	14
Israel.....	Below South Branch.....	21.2
Israel.....	Above South Branch.....	8.7
Passumpsic.....	St. Johnsbury Center, Vt.....	390

ISRAEL RIVER (ABOVE SOUTH BRANCH) NEAR
JEFFERSON HIGHLANDS, N. H.

This station, shown on Plate IV, was established September 2, 1903, by N. C. Grover. It is located at a small wooden highway bridge in the town of Randolph, about half way between the railway stations of Jefferson Highlands and Bowman and two and one half miles from either place. The drainage basin at this point has an area of 8.7 square miles. The headwaters of the river lie on the slopes of Mount Adams and Mount Jefferson, at elevations approximating 5,000 feet. The length of the river from its source to the gaging station is about five miles. The elevation at the gaging station is about 1,400 feet. All slopes are steep; many are precipitous. There is no pondage or artificial storage of the water. The underlying rock is granite, exposed in the mountain tops. The basin was generally in virgin forest when this station was established but a considerable area was cut during the winter of 1903-'04. A statement in detail of the forest conditions on this drainage area will be found on page 143.

A standard chain gage is attached to the upstream truss of the bridge; length of chain, 15.43 feet. It is referred to bench marks as follows: (1) Marked point on east end of cross timber of bridge, elevation 8.58 feet; (2) Top of boulder, 150 feet east of bridge, 30 feet south of river, elevation, 11.99 feet. Elevations are above datum of gage. The channel is straight for 100 feet above and 50 feet below the station and is about 20 feet wide. The banks are subject to overflow in extreme freshet. Low water measurements are made by wading about 20 feet above the bridge. The bed is gravelly and permanent. The gage is read once daily by E. A. Crawford of Jefferson Highlands.

LIST OF DISCHARGE MEASUREMENTS OF ISRAEL RIVER,
ABOVE SOUTH BRANCH, AT RANDOLPH, N. H.

No.	Date.	Hydrographer.	Area of sec. (Sq. ft.)	Mean veloc. (Ft. per sec.)	Gage height. (Feet.)	Dis- charge. (Sec. ft.)
	1903.					
1	Sept. 2	H. K. Barrows.....	14.1	0.67	1.20	9.4
2	Sept. 18	H. K. Barrows.....	14.1	0.57	1.17	8.1
3	Oct. 9	N. C. Grover.....	12.6	0.46	1.15	5.8
	1904.					
4	Apr. 16	N. C. Grover.....	23	0.94	1.44	22
5	Apr. 18	N. C. Grover.....	24	0.92	1.48	22
6	May 1	S. K. Clapp.....	46	2.18	2.33	100
7	May 11	S. K. Clapp.....	48	2.44	2.35	117
8	May 25	S. K. Clapp.....	29	1.14	1.60	33
9	June 15	S. K. Clapp.....	16	0.41	1.08	6.6
10	July 22	S. K. Clapp.....	3.1	1.26	1.04	3.9
11	Aug. 10	S. K. Clapp.....	3.0	1.43	1.04	4.3
12	Sept. 24	H. K. Barrows.....	17	1.04	1.41	18
13	Oct. 13	T. W. Norcross.....	17	0.75	1.32	12

MEAN DAILY GAGE HEIGHT, IN FEET, OF ISRAEL RIVER,
ABOVE SOUTH BRANCH, JEFFERSON HIGHLANDS,
N. H., FOR 1903.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1										1.08	1.22	1.08
2									1.20	1.15	1.20	1.08
3									1.20	1.12	1.20	1.20
4									1.20	1.10	1.20	1.30
5									1.20	1.58	1.22	1.60
6									1.20	1.20	1.38	1.70
7									1.20	1.15	1.32	1.70
8									1.10	1.15	1.20	1.60
9									1.10	1.20	1.08	1.50
10									1.10	1.15	1.08	1.30
11									1.10	1.10	1.10	1.20
12									1.10	1.10	1.20	1.20
13									1.10	1.20	1.20	1.40
14									1.10	1.20	1.18	2.20
15									1.10	1.20	1.18	2.20
16									1.10	1.18	1.18	2.00
17									1.10	1.18	1.18	1.80
18									1.18	1.50	*1.32	1.60
19									1.10	1.28	1.55	1.40
20									1.10	1.25	1.55	1.40
21									1.10	1.20	1.60	2.20
22									1.10	1.20	1.60	2.40
23									1.10	1.20	1.32	2.50
24									1.10	1.30	1.12	2.50
25									1.10	1.25	1.62	2.40
26									1.08	1.20	1.40	2.00
27									1.08	1.15	1.30	2.00
28									1.15	1.15	1.35	1.10
29									1.10	1.18	1.38	1.40
30									1.10	1.25	1.08	1.40
31										1.22	.....	1.20

*Anchor ice from November 18-December 31.

MEAN DAILY GAGE HEIGHT, IN FEET, OF ISRAEL RIVER,
ABOVE SOUTH BRANCH, JEFFERSON HIGHLANDS,
N. H., FOR 1904.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.20	.80	.80	1.40	2.35	1.35	1.10	1.20	1.10	1.60	1.45	.....
2	1.20	.80	.80	1.30	2.00	1.30	1.10	1.18	1.32	1.60	1.45	.....
3	1.10	.80	.80	1.30	1.90	1.40	1.45	1.30	1.60	1.60	1.40	.....
4	1.05	.78	.80	1.30	2.10	1.35	1.45	1.30	1.55	1.50	1.35	.....
5	1.00	.78	.80	1.30	2.10	1.30	1.30	1.20	1.50	1.50	1.35	.....
6	1.00	.78	.80	1.25	2.00	1.30	1.25	1.15	1.40	1.60	.....	.....
7	.90	1.80	.80	1.65	2.10	1.45	1.20	1.10	1.40	1.60	.....	.....
8	.90	2.50	.80	1.60	2.10	1.40	1.15	1.05	1.35	1.60	.....	.....
9	.85	2.80	.80	1.50	2.00	1.35	1.10	1.00	1.30	1.55	.....	.....
10	.85	3.00	.80	1.50	1.90	1.30	1.05	1.00	1.30	1.50	.....	.....
11	.85	2.50	.80	1.50	2.35	1.25	1.00	1.05	1.25	1.50	.....	.....
12	.85	1.50	.80	1.50	1.80	1.20	.95	1.10	1.20	1.40	.....	.....
13	.82	1.30	.80	1.70	1.70	1.15	1.20	1.35	1.15	1.35	.....	.....
14	.82	1.10	2.00	1.70	1.70	1.15	1.10	1.30	1.15	1.30	.....	.....
15	.82	1.00	3.20	1.50	1.65	1.12	1.08	1.62	2.15	1.30	.....	.....
16	.80	1.00	3.00	1.45	2.00	1.12	1.05	1.55	1.60	1.30	.....	.....
17	.80	.95	2.70	1.40	3.20	1.10	1.00	1.50	1.60	1.30	.....	.....
18	.80	.92	2.40	1.40	2.10	1.10	.98	1.40	1.30	1.30	.....	.....
19	.80	.90	3.20	1.45	2.25	1.05	.98	1.30	1.20	1.28	.....	.....
20	.80	.88	4.30	1.45	2.30	1.00	.98	1.25	1.70	1.20	.....	.....
21	.80	.88	4.00	1.50	2.00	.95	.98	1.68	1.60	1.28	.....	.....
22	.80	.88	3.40	1.50	2.00	1.35	.95	1.62	1.60	1.25	.....	.....
23	.80	.88	3.00	1.60	1.80	1.25	.95	1.60	1.50	2.00	.....	.....
24	.80	.85	4.40	1.68	1.75	1.25	.98	1.55	1.40	1.90	.....	.....
25	.80	.85	4.80	2.70	1.60	1.30	1.00	1.50	1.60	1.80	.....	.....
26	.80	.85	4.70	1.70	1.65	1.25	1.20	1.40	1.60	1.70	.....	.....
27	.80	.82	4.00	1.70	1.65	1.10	1.20	1.30	1.50	1.75	.....	.....
28	.80	.82	2.00	1.90	1.55	1.10	1.15	1.20	1.40	1.70	.....	.....
29	.80	.82	1.70	2.90	1.50	1.15	1.18	1.15	2.00	1.60	.....	.....
30	.80	.....	1.40	2.30	1.45	1.15	1.20	1.15	1.90	1.55	.....	.....
31	.80	.....	1.40	.....	1.40	.....	1.15	1.10	.....	1.55	.....	.....

RATING TABLE FOR ISRAEL RIVER, ABOVE SOUTH
BRANCH, NEAR RANDOLPH, N. H., FROM SEPTEMBER 2, 1903, TO DECEMBER 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
.....	1.00	3.0	2.00	67	3.00	230	4.00	410
.....	1.05	4.0	2.05	73	.....	.....	.....	.....
.....	1.10	5.3	2.10	79	3.10	248	4.10	428
.....	1.15	6.8	2.15	86	.....	.....	.....	.....
.....	1.20	8.6	2.20	93	3.20	266	4.20	446
.....	1.25	10.5	2.25	100	.....	.....	.....	.....
.....	1.30	13	2.30	108	3.30	284	4.30	464
.....	1.35	15	2.35	116	.....	.....	.....	.....
.....	1.40	18	2.40	124	3.40	302	4.40	482
.....	1.45	21	2.45	132	.....	.....	.....	.....
.....	1.50	24	2.50	140	3.50	320	4.50	500
.....	1.55	27	2.55	149	.....	.....	.....	.....
.....	1.60	30	2.60	158	3.60	338	4.60	518
.....	1.65	34	2.65	167	.....	.....	.....	.....
.....	1.70	38	2.70	176	3.70	356	4.70	536
.....	1.75	42	2.75	185	.....	.....	.....	.....
0.80	1.0	1.80	46	2.80	194	3.80	374	4.80	554
0.85	1.2	1.85	50	2.85	203	.....	.....	.....	.....
0.90	1.6	1.90	55	2.90	212	3.90	392	.....	.....
0.95	2.2	1.95	61	2.95	221	.....	.....	.....	.....

This table is applicable only for open channel. It is based upon discharge measurements of 1903 and 1904. It is well defined between gage heights 1.0 and 2.4 feet. Outside these limits it has been extended by interpolation. It is tangent at 2.5 feet gage height with a difference of 9 per tenth. The table has been applied to the nearest hundredth foot gage height.

ESTIMATED MONTHLY DISCHARGE OF ISRAEL RIVER,
ABOVE SOUTH BRANCH, AT JEFFERSON HIGH-
LANDS, N. H., FOR 1903-'04.

(Drainage area, 8.7 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1903.							
September 2-30..	8.6	4.8	6.1	.70	.75	.....	.....
October.....	29	4.8	9.3	1.07	1.23	51	2.43
November 1-17..	17.0	4.8	8.7	1.00	.63	.....	1.41
December.....	.....	.....	.....	.....	.....	.....	2.02
1904.							
January.....	.....	.....	.....	.....	.....	.....	2.58
February.....	.....	.....	.....	.....	.....	.....	1.22
March 14-31....	554	18.0	259	29.77	19.93	.....	2.31
April.....	212	10.6	39	4.48	5.00	150	3.37
May....	266	21	66	7.59	8.75	200	4.46
June.....	21	2.2	10.1	1.16	1.29	65	1.97
July.....	21	2.2	6.5	.75	.86	23	3.66
August.....	36	3.0	14.3	1.64	1.89	36	5.32
September.....	86	5.3	24.7	2.84	3.17	52	6.06
October.....	67	10.6	26.4	3.03	3.49	134	2.60



GAGING STATION ON ISRAEL RIVER AT RANDOLPH (ABOVE SOUTH BRANCH).



GAGING STATION ON ISRAEL RIVER AT JEFFERSON HIGHLANDS (BELOW SOUTH BRANCH).

ISRAEL RIVER (BELOW SOUTH BRANCH) NEAR
JEFFERSON HIGHLANDS, NEW HAMPSHIRE.

This station, shown on Plate IV, was established September 2, 1903, by N. C. Grover. It is located at a small wooden highway bridge about two miles from the railway station at Jefferson Highlands, in the town of Jefferson. The drainage basin at this point is 21.2 square miles. South Branch of Israel River has its mouth above this station and below the station previously described. South Branch drains an area of 10.5 square miles; its headwaters are on the slopes of Mount Jefferson and Mount Dartmouth, at elevations of 3,000 to 5,000 feet. The extreme length from its source to its mouth is about five miles. The elevation at its mouth is about 1,350 feet. As all the slopes are steep, there is little or no storage of water. The underlying rock is granite, exposed in the mountain peaks. The basin has been generally "hard cut," as the lumbermen say, but has not been burned. A statement in detail of the forest conditions on this drainage area will be found on page 143.

A standard chain gage is attached to the down stream side of the truss of the bridge, length of chain, 12.99 feet. It is referred to bench marks as follows: (1) Marked point on center cross timber of bridge, elevation 8.14 feet; (2) Top of boulder, 50 feet north of bridge, 15 feet west of highway, elevation 5.20 feet. Elevations are above datum of gage. The channel is straight for 100 feet above and 100 feet below the station and is about 20 feet wide. The bed is rough and rocky but permanent. The banks are subject to overflow in extreme freshets. Depths average at low water about one foot. Gage is read once daily by E. A. Crawford of Jefferson Highlands.

LIST OF DISCHARGE MEASUREMENTS OF ISRAEL RIVER,
BELOW SOUTH BRANCH, NEAR JEFFERSON HIGH-
LANDS, N. H.

No.	Date.	Hydrographer.	Width. Feet.	Area of sec. Sq. ft.	Mean veloc. Ft. per sec.	Gage height. Feet.	Dis- charge Sec.-ft.
1903							
1	Sept. 2	H. K. Barrows.....	.....	13.3	1.35	1.13	17.9
2	Sept. 18	H. K. Barrows.....	.....	12.3	1.21	1.10	14.9
3	Oct. 9	N. C. Grover.....	.....	10.4	1.11	1.03	11.5
1904							
4	April 16	N. C. Grover .....	.....	16	2.55	1.43	42
5	April 18	N. C. Grover.....	.....	18	2.87	1.49	52
6	April 30	S. K. Clapp.....	.....	64	4.75	2.55	304
7	May 1	S. K. Clapp.....	.....	54	4.29	2.28	232
8	May 11	S. K. Clapp.....	.....	57	4.80	2.40	373
9	May 25	S. K. Clapp.....	.....	24	3.33	1.64	80
10	June 15	S. K. Clapp.....	.....	12	1.25	1.09	15
11	July 22	S. K. Clapp.....	.....	10.4	0.79	0.94	8.2
12	Aug. 10	S. K. Clapp.....	.....	11.5	0.82	1.00	9.4
13	Sept. 24	H. K. Barrows T. W. Norcross .....	.....	18.5	1.99	1.40	37
14	Oct. 13	T. W. Norcross.....	.....	17	1.63	1.36	28

MEAN DAILY GAGE HEIGHT, IN FEET, OF ISRAEL RIVER,
BELOW SOUTH BRANCH, AT JEFFERSON HIGH-
LANDS, N. H., FOR 1903.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.00	1.12	1.18
2	1.10	1.12	1.05	1.18
3	1.10	1.02	1.05	1.18
4	1.10	1.00	1.05	1.18
5	1.20	1.42	1.12	1.18
6	1.10	1.15	1.30	1.18
7	1.10	1.08	1.28	1.18
8	1.10	1.05	1.20	1.15
9	1.10	1.05	1.10	1.15
10	1.10	1.02	1.10	1.12
11	1.10	1.00	1.10	1.12
12	1.10	1.00	1.10	1.12
13	1.00	1.10	1.10	1.30
14	1.00	1.05	1.10	2.20
15	1.00	1.05	1.10	2.20
16	1.00	1.02	1.12	1.80
17	1.00	1.02	1.15	1.60
18	1.10	1.55	1.28	1.40
19	1.02	1.25	1.28	1.40
20	1.02	1.22	1.28	1.30
21	1.00	1.10	1.28	2.50
22	1.00	1.08	*1.58	2.60
23	1.00	1.08	1.30	2.80
24	1.00	1.20	1.02	2.10
25	1.00	1.10	1.60	2.10
2698	1.08	1.92	2.70
2795	1.05	1.58	2.50
28	1.05	1.05	1.68	2.10
29	1.00	1.05	1.50	1.10
30	1.00	1.15	1.18	1.60
31	1.12	.....	1.60

* Anchor ice from November 22 to December 31.

MEAN DAILY GAGE HEIGHT, IN FEET, OF ISRAEL RIVER,
BELOW SOUTH BRANCH, AT JEFFERSON HIGHLANDS,
N. H., FOR 1904.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.60	.85	.85	1.40	2.35	1.35	1.10	1.20	1.10	1.60	1.45	.....
2	1.40	.85	.85	1.35	2.00	1.30	1.10	1.15	1.30	1.60	1.45	.....
3	1.10	.82	.82	1.35	1.90	1.40	1.45	1.30	1.60	1.60	1.40	.....
4	1.08	.82	.82	1.35	2.10	1.35	1.40	1.30	1.50	1.60	1.35	.....
5	1.00	.82	.82	1.30	2.10	1.30	1.30	1.20	1.50	1.50	1.35	.....
6	1.00	.82	.82	1.30	1.90	1.30	1.25	1.10	1.45	1.50	.....	.....
7	.95	1.90	.82	1.70	2.10	1.45	1.20	1.05	1.45	1.60	.....	.....
8	.92	2.70	.80	1.60	2.00	1.40	1.15	1.05	1.40	1.60	.....	.....
9	.90	3.30	.80	1.60	1.90	1.35	1.10	1.00	1.35	1.55	.....	.....
10	.90	3.00	.80	1.50	1.90	1.30	1.05	1.00	1.30	1.50	.....	.....
11	.90	2.10	.80	1.50	2.40	1.25	1.00	1.10	1.25	1.50	.....	.....
12	.90	1.20	.80	1.50	1.85	1.20	.95	1.10	1.20	1.40	.....	.....
13	.88	1.20	.80	1.70	1.75	1.15	1.20	1.30	1.15	1.35	.....	.....
14	.88	1.10	2.40	1.70	1.70	1.15	1.10	1.20	1.15	1.30	.....	.....
15	.88	1.00	3.50	1.50	2.05	1.12	1.08	1.60	2.22	1.30	.....	.....
16	.85	1.00	3.40	1.45	2.10	1.12	1.05	1.50	1.60	1.28	.....	.....
17	.85	.90	3.00	1.40	3.25	1.10	1.00	1.40	1.60	1.28	.....	.....
18	.85	.90	3.70	1.40	2.05	1.10	.98	1.30	1.35	1.28	.....	.....
19	.85	.90	3.70	1.45	2.30	1.05	.98	1.20	1.20	1.25	.....	.....
20	.85	.90	3.70	1.45	2.35	1.00	.98	1.15	1.70	1.25	.....	.....
21	.85	.90	4.40	1.50	2.10	.95	.98	1.70	1.60	1.25	.....	.....
22	.85	.88	4.20	1.50	2.00	1.35	.95	1.60	1.50	2.00	.....	.....
23	.85	.88	3.70	1.60	1.80	1.30	.95	1.60	1.40	2.00	.....	.....
24	.85	.88	3.00	1.70	1.70	1.25	.98	1.50	1.40	1.92	.....	.....
25	.85	.88	4.70	2.70	1.65	1.30	1.00	1.40	1.60	1.85	.....	.....
26	.85	.85	5.20	1.90	1.65	1.25	1.20	1.30	1.60	1.70	.....	.....
27	.85	.85	5.00	1.80	1.75	1.15	1.20	1.25	1.50	1.70	.....	.....
28	.85	.85	4.00	1.90	1.55	1.15	1.10	1.20	1.40	1.60	.....	.....
29	.85	.85	2.20	2.70	1.50	1.10	1.30	1.15	2.05	1.50	.....	.....
30	.85	.....	1.70	2.30	1.45	1.10	1.20	1.15	1.90	1.50	.....	.....
31	.85	.....	1.40	.....	1.40	.....	1.15	1.10	.....	1.48	.....	.....

Ice January 1-March 13.

RATING TABLE FOR ISRAEL RIVER, BELOW SOUTH
BRANCH, NEAR JEFFERSON HIGHLANDS, N. H., FROM
SEPTEMBER 2, 1903, TO DECEMBER 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
.....	1.00	10	2.00	157	3.00	436	4.00	716	5.00	996
.....	1.05	13	2.05	170	3.05	450	4.05	730	5.05	1,010
.....	1.10	16	2.10	184	3.10	464	4.10	744	5.10	1,024
.....	1.15	19	2.15	198	3.15	478	4.15	758	5.15	1,038
.....	1.20	22	2.20	212	3.20	492	4.20	772	5.20	1,052
.....	1.25	26	2.25	226	3.25	506	4.25	786	.....	.....
.....	1.30	30	2.30	240	3.30	520	4.30	800	.....	.....
.....	1.35	35	2.35	254	3.35	534	4.35	814	.....	.....
.....	1.40	40	2.40	268	3.40	548	4.40	828	.....	.....
.....	1.45	46	2.45	282	3.45	562	4.45	842	.....	.....
.....	1.50	52	2.50	296	3.50	576	4.50	856	.....	.....
.....	1.55	59	2.55	310	3.55	590	4.55	870	.....	.....
.....	1.60	67	2.60	324	3.60	604	4.60	884	.....	.....
.....	1.65	76	2.65	338	3.65	618	4.65	898	.....	.....
.....	1.70	86	2.70	352	3.70	632	4.70	912	.....	.....
.....	1.75	97	2.75	366	3.75	646	4.75	926	.....	.....
0.80	2.5	1.80	108	2.80	380	3.80	660	4.80	940	.....	.....
0.85	3.7	1.85	120	2.85	394	3.85	674	4.85	954	.....	.....
0.90	5.3	1.90	132	2.90	408	3.90	688	4.90	968	.....	.....
0.95	7.4	1.95	144	2.95	422	3.95	702	4.95	982	.....	.....

This table is applicable only for open channel. It is based upon discharge measurements of 1903 and 1904. It is well determined between gage heights .9 and 2.6 feet. Outside these limits it has been extended by interpolation. It is tangent at 2.1 feet gage height with a difference of 28 per tenth. The table has been applied to the nearest hundredth foot gage height.

ESTIMATED MONTHLY DISCHARGE OF ISRAEL RIVER,
BELOW SOUTH BRANCH, AT JEFFERSON HIGHLANDS,
N. H., FOR 1903-1904.

(Drainage area 21.2 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1903.							
September 2-30.	22	7	13	.61	.66	.....	.....
October.....	59	10	17	.80	.92	38	2.43
November 1-17.	30	13	18	.85	.54	.....	1.41
December.....							2.02
The period ..							.....
1904.							
January.....							2.58
February.....							1.22
March 14-31....	1,052	40	578	27.26	18.25	.....	2.31
April.....	352	30	87	4.10	4.57	140	3.37
May.....	506	40	152	7.17	8.27	190	4.46
June.....	46	7.4	25	1.18	1.32	67	1.97
July.....	46	7.4	17.4	.82	.95	26	3.66
August.....	86	10	30	1.42	1.64	31	5.32
September.....	218	16	57	2.69	3.00	50	6.06
October.....	157	26	62	2.92	3.37	130	2.60

Ice November 22, 1903, to March 13, 1904.

Rainfall records for Jefferson Highlands, N. H.

The discharge at the upper station on Israel River has been subtracted from that at the lower station to obtain the run-off from the area tributary to the river between the two stations. The results are shown in the following table:

ESTIMATED MONTHLY DISCHARGE OF ISRAEL RIVER AT
JEFFERSON HIGHLANDS, N. H., FOR 1903 AND 1904.

(Drainage area, 12.5 square miles.)

Month.	Mean discharge in second-feet.	Run-off.			Rainfall. (Inches.)
		Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1903.					
September 2-30.....	6.9	.55	.59	.....	.....
October.....	7.7	.62	.71	29	2.43
November 1-17.....	9.3	.74	.47	.....	1.41
December.....					2.02
1904.					
January.....					2.58
February.....					1.22
March 14-31.....	319	25.52	17.08	.....	2.31
April.....	48	3.84	4.28	130	3.37
May.....	86	6.88	7.93	180	4.46
June.....	14.9	1.19	1.33	68	1.97
July.....	10.9	.87	1.00	27	3.66
August.....	15.7	1.26	1.45	27	5.32
September.....	32	2.56	2.86	47	6.06
October.....	36	2.88	3.32	130	2.6

AMMONOOSUC RIVER AT BRETTON WOODS, N. H.

This station was established August 28, 1903, by N. C. Grover. It is located at the steel highway bridge near Mount Pleasant House at Bretton Woods. The drainage area at this point is 34 square miles. The headwaters of the river come from the westerly slopes of Mount Jefferson and Mount Washington and the lesser peaks of the White Mountains lying to the south. The underlying rock is granite, which is exposed at points in the river bed and on the various mountain summits. The slopes and valleys are usually well forested, with a preponderance of evergreen growth. Much of the area has been cut for spruce several years ago, but there is now a thick forest cover. A statement in detail of the forest conditions on this drainage area will be found on page 143. There is no pondage or artificial storage. The slope of the river is steep. A typical view on this river is shown on Plate V.

A standard chain gage is attached to the floor on the down stream side of the bridge; length of chain, 18.86 feet. It is referred to the following described bench marks: (1) Marked point on bridge near gage, elevation 17.36 feet; (2) Northwest corner of east abutment, elevation 14.46 feet; (3) Top of boulder, 100 feet below bridge and between the river and tracks of Boston & Maine Railroad, elevation 17.11 feet. Elevations are above datum of gage. Measurements of flow are made from a footbridge located about 300 feet down stream from the gage. The channel is straight for 300 feet above and 200 feet below this bridge and is about 35 feet wide. The banks are high and not subject to overflow, except in extreme freshets. The bed is somewhat rocky, but permanent. Low water measurements are made by wading about 100 feet above the footbridge on account of small velocity at the station.

LIST OF DISCHARGE MEASUREMENTS OF AMMONOOSUC RIVER AT BRETTON WOODS, N. H.

No.	Date.	Hydrographer.	Width. (Ft.)	Area of sec. (Sq. ft.)	Mean veloc. (Ft. per sec.)	Gage height. (Ft.)	Discharge. (Sec.-ft.)	Remarks.
	1903.							
1	Aug. 28	H. K. Barrows...				1.65	45	
2	Sept. 2	H. K. Barrows...				1.50	31	
3	Sept. 3	H. K. Barrows...				1.48	29	
4	Sept. 17	H. K. Barrows...				1.26	15	
5	Sept. 17	H. K. Barrows...				1.26	16	
6	Oct. 10	N. C. Grover....				1.64	40	
	1904.							
7	Apr. 15	N. C. Grover....	37	94	0.95	2.00	89	
8	Apr. 30	S. K. Clapp.....	40	172	3.22	3.45	554	[out of order. Discarded. Meter
9	May 2	S. K. Clapp.....	40	166	2.81	3.20	467	
10	May 9	S. K. Clapp.....	40	175	3.62	3.47	634	
11	May 10	S. K. Clapp.....	40	175	3.58	3.51	627	
12	May 20	S. K. Clapp.....	39	167	2.99	3.15	499	
13	May 25	S. K. Clapp.....	32	91	1.35	2.19	123	
14	June 10	S. K. Clapp.....	30	66	0.65	1.60	43	
15	July 21	S. K. Clapp.....	14	16	1.12	1.24	18	[above gage. Measurement 400'
16	Aug. 9	S. K. Clapp.....	14	17	1.36	1.30	23	[above gage. Measurement 300'
17	Aug. 23	H. K. Barrows...	35	82	0.82	1.89	67	
18	Aug. 24	H. K. Barrows...	22	25	1.76	1.67	44	[gage. Wading below
19	Sept. 25	H. K. Barrows... T. W. Norcross..	38	94	1.25	2.26	118	[gage. Foot bridge below
20	Oct. 11	T. W. Norcross..	38	79	0.78	1.84	62	
21	Nov. 17	T. W. Norcross..	35	62	0.46	1.51	28	

MEAN DAILY GAGE HEIGHT, IN FEET, OF AMMONOOSUC
RIVER, AT BRETTON WOODS, N. H., FOR 1903.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.55	1.35	1.70	1.30
2	1.55	1.42	1.62	1.30
3	1.48	1.38	1.58	1.30
4	1.42	1.35	1.50	1.35
5	1.52	1.52	1.58	1.35
6	1.48	1.52	2.05	1.35
7	1.44	1.45	1.55	1.35
8	1.44	1.48	1.55	1.35
9	1.40	1.65	1.55	1.35
10	1.40	1.70	1.55	1.40
11	1.40	1.65	1.50	1.40
12	1.32	1.60	1.50	1.35
13	1.32	1.52	1.50	1.52
14	1.32	1.50	1.50	2.12
15	1.32	1.45	1.50	.....
16	1.28	1.45	1.50	.....
17	1.28	1.45	1.50	.....
18	1.55	2.60	1.68	.....
19	1.40	1.95	1.65	1.50
20	1.38	1.75	1.60	.....
21	1.35	1.60	1.55	2.82
22	1.32	1.60	1.50	2.62
23	1.30	1.68	1.50	2.22
24	1.30	1.78	1.48	1.78
25	1.30	1.65	1.45	1.60
26	1.30	1.65	1.40	1.60
27	1.30	1.60	1.40	1.65
28	1.60	1.40	1.55	1.35	1.70
29	1.38	1.55	1.30	1.65
30	1.52	1.35	1.60	1.32	1.60
31	1.55	.....	1.65	.....	1.60

Ice December 15-31.

MEAN DAILY GAGE HEIGHT, IN FEET, OF AMMONOOSUC
RIVER, AT BRETTON WOODS, N. H., FOR 1904.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.55	.....	.....	1.85	3.78	1.88	1.40	1.40	1.35	2.75	1.85	.....
2	1.50	.....	.....	1.90	3.20	1.75	1.78	1.38	1.48	2.55	1.80	.....
3	.....	.....	2.10	1.90	2.90	1.75	2.02	1.58	1.48	2.40	1.80	.....
4	1.55	.....	.....	1.90	3.30	1.70	1.65	1.50	1.90	2.20	1.80	.....
5	.....	.....	1.88	1.88	3.45	1.70	1.62	1.38	1.58	2.10	1.80	.....
6	.....	1.40	.....	1.95	2.95	1.70	1.50	1.40	1.50	2.20	.....	.....
7	.....	.....	1.70	2.10	3.10	1.72	1.42	1.38	1.48	2.08	.....	.....
8	.....	.....	.....	2.60	3.18	1.78	1.38	1.32	1.45	1.72	.....	.....
9	1.50	.....	.....	3.35	2.90	1.68	1.35	1.30	1.42	1.90	.....	.....
10	1.50	.....	.....	4.25	3.32	1.60	1.35	1.30	1.40	1.90	.....	.....
11	1.45	.....	1.75	2.95	3.50	1.55	1.35	1.48	1.38	1.82	.....	.....
12	1.45	.....	1.75	2.55	2.92	1.50	1.35	1.68	1.35	1.78	.....	.....
13	1.45	1.35	.....	2.35	2.78	1.50	1.45	1.55	1.40	1.80	.....	.....
14	1.40	.....	.....	2.05	2.60	1.48	1.38	1.50	1.40	1.80	.....	.....
15	.....	.....	1.50	2.00	2.92	1.45	1.30	1.75	3.15	1.78	.....	.....
16	.....	.....	1.50	1.80	3.85	1.42	1.30	1.48	2.20	1.75	.....	.....
17	1.40	.....	1.55	1.90	4.22	1.40	1.30	1.40	1.80	1.70	.....	.....
18	.....	.....	.....	2.00	2.98	1.40	1.30	1.40	1.80	1.70	.....	.....
19	.....	1.40	1.50	2.10	3.35	1.35	1.28	1.35	2.15	1.68	.....	.....
20	.....	.....	.....	2.10	3.20	1.35	1.25	1.92	1.82	1.65	.....	.....
21	.....	.....	1.50	2.00	2.82	1.35	1.25	2.30	2.70	3.55	.....	.....
22	.....	2.50	1.55	2.00	2.58	2.02	1.25	1.82	2.25	3.05	.....	.....
23	2.10	2.40	2.15	2.02	2.45	1.65	1.25	1.95	1.85	2.48	.....	.....
24	2.20	2.32	2.40	2.48	2.32	1.48	1.25	1.70	1.92	2.25	.....	.....
25	.....	2.15	3.05	3.25	2.22	1.40	1.25	1.58	2.12	2.20	.....	.....
26	.....	.....	7.60	2.82	2.18	1.68	1.30	1.52	2.00	2.28	.....	.....
27	.....	1.50	4.02	3.05	2.25	1.48	1.60	1.50	1.92	2.32	.....	.....
28	.....	.....	2.32	3.30	2.08	1.45	1.35	1.42	1.82	2.20	.....	.....
29	1.60	.....	2.00	3.95	1.95	1.40	1.45	1.40	1.90	2.35	.....	.....
30	.....	.....	2.00	3.75	1.90	1.40	1.42	1.40	2.90	2.00	.....	.....
31	.....	.....	1.85	.....	1.85	.....	1.35	1.35	.....	1.98	.....	.....

Ice January 1 to March 25.

RATING TABLE FOR AMMONOOSUC RIVER, NEAR BRET-
TON WOODS, N. H., FROM AUGUST 28, 1903, TO
DECEMBER 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
.....	.....	2.00	80	3.00	365	4.00	940	5.00	1,540	6.00	2,140
.....	.....	2.05	86	3.05	390	.....	.....	.....	.....	.....	.....
.....	.....	2.10	93	3.10	415	4.10	1,000	.....	.....	.....	.....
.....	.....	2.15	100	3.15	440	.....	.....	.....	.....	.....	.....
.....	.....	2.20	108	3.20	465	4.20	1,060	.....	.....	.....	.....
1.25	15	2.25	116	3.25	490	.....	.....	.....	.....	.....	.....
1.30	18	2.30	125	3.30	520	4.30	1,120	.....	.....	.....	.....
1.35	21	2.35	135	3.35	550	.....	.....	.....	.....	.....	.....
1.40	24	2.40	146	3.40	580	4.40	1,180	.....	.....	.....	.....
1.45	27	2.45	158	3.45	610	.....	.....	.....	.....	.....	.....
1.50	31	2.50	172	3.50	640	4.50	1,240	5.50	1,840	.....	.....
1.55	35	2.50	187	.....	.....	.....	.....	.....	.....	.....	.....
1.60	39	2.60	203	3.60	700	4.60	1,300	.....	.....	.....	.....
1.65	43	2.65	220	.....	.....	.....	.....	.....	.....	.....	.....
1.70	48	2.70	238	3.70	760	4.70	1,360	.....	.....	.....	.....
1.75	53	2.75	257	.....	.....	.....	.....	.....	.....	.....	.....
1.80	58	2.80	277	3.80	820	4.80	1,420	.....	.....	.....	.....
1.85	63	2.85	297	.....	.....	.....	.....	.....	.....	.....	.....
1.90	68	2.90	318	3.90	880	4.90	1,480	.....	.....	.....	.....
1.95	74	2.95	341	.....	.....	.....	.....	.....	.....	.....	.....

This table is applicable only for open channel. It is based upon discharge measurements made during 1903 and 1904. It is well defined between gage heights 1.2 and 3.3 feet. Outside these limits it has been extended by interpolation. It is tangent at 3.5 feet gage height with a difference of 60 per tenth. The table has been applied to the nearest hundredth foot gage height.

ESTIMATED MONTHLY DISCHARGE OF AMMONOOSUC
RIVER AT BRETTON WOODS, N. H., FOR 1903 AND 1904.

(Drainage area, 34 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.	Per cent. of rainfall.	
1903.							
September.....	35	17	23	.68	.76	.....
October.....	203	21	42	1.24	1.43	52	2.77
November.....	86	18	34	1.00	1.12	97	1.16
December 1-14..	96	18	27	.80	.41	.....	3.84
1904.							
January.....							1.94
February.....							0.48
March 26-31.....	3,100	63	734	21.59	4.82	.....	2.53
April.....	1,090	58	245	7.21	8.04	574	1.40
May.....	1,072	63	362	10.65	12.28	419	2.93
June.....	82	21	37	1.09	1.22	.....
July.....	82	15	25	.74	.85	26	3.19
August.....	125	18	36	1.06	1.22	27	4.48
September.....	440	21	80	2.35	2.62	34	7.81
October.....	670	43	123	3.62	4.17	212	3.72

River frozen, December 15, 1903, to March 25, 1904.

Rainfall records for Bretton Woods, N. H.

ZEALAND RIVER AT TWIN MOUNTAIN, N. H.

This gaging station, shown on Plate V, was established August 29, 1903, by N. C. Grover. It is located about 800 feet above the mouth of the river, which empties into the Ammonoosuc at a point midway between Fabyans and Twin Mountain and about two and one half miles from either place. The drainage basin at this point has an area of 14 square miles. The headwaters lie on the slopes of a spur of the White Mountains at elevations of 2,500 to 3,000 feet. The length of the river from its headquarters to its mouth is about seven miles, at which point the elevation is approximately 1,500 feet. All slopes within the basin are steep. There is no pondage or artificial storage of water. The underlying rock is granite, which is exposed in the mountain peaks. About ten or twelve years ago this basin was entirely deforested and burned over. At the present time there is a thick stand of deciduous growth of poplar and bird cherry, averaging 12 to 15 feet in height, which affords a thick covering during the summer months but practically no cover during the winter and spring. Within the basin we find the usual conditions of this stage of reforestation after a thorough burning. A statement in detail of the forest conditions on this drainage area will be found on page 143.

A standard chain gage is attached to trees on the bank. Length of chain is 13.40 feet. It is referred to bench marks as follows: (1) Top of large boulder under the gage, elevation 3.56 feet; (2) Drift bolt driven into the maple tree to which the gage is attached, elevation 11.32 feet. Elevations are above datum of gage. Low water measurements are made by wading. The bed is rough and rocky, but permanent. The banks are high and only subject to overflow in extreme freshets. The gage is read once a day by William Cote of Twin Mountain.



AMMONOOSUC RIVER AT BETHLEHEM JUNCTION.



ZEALAND RIVER AT GAGING STATION.

LIST OF DISCHARGE MEASUREMENTS OF ZEALAND RIVER,
AT TWIN MOUNTAIN, N. H.

No.	Date.	Hydrographer.	Width.—Ft.	Area of sec. Sq. ft.	Mean veloc. Ft. per sec.	Gage height. Feet.	Discharge. Sec.-ft.	Remarks.
	1903							
1	Aug. 29	H. K. Barrows.		29.1	0.45	2.01	13.1	Wading 100' below gage.
2	Sept. 3	H. K. Barrows.		26.6	0.40	1.98	10.7	Wading 100' below gage.
3	Sept. 18	H. K. Barrows.		33.5	0.68	2.22	22.9	Wading 100' below gage.
4	Oct. 10	N. E. Grover.		35.5	0.76	2.29	27	Wading 200' below gage.
	1904							
5	Apr. 15	N. E. Grover.		25.3	1.88	2.52	47.5	Highway bridge, 500' below gage.
6	Apr. 30	S. K. Clapp.		79	4.09	3.55	323	From bridge.
7	May 10	S. K. Clapp.		56	3.25	3.00	182	From bridge.
8	May 19	S. K. Clapp.		80	4.60	3.60	368	From bridge.
9	May 20	S. K. Clapp.		54	3.37	3.08	182	From bridge.
10	May 25	S. K. Clapp.		21	2.10	2.49	44	From bridge.
11	June 10	S. K. Clapp.		10	2.10	2.18	21	From bridge.
12	July 21	S. K. Clapp.		6.8	1.12	2.04	7.6	From bridge.
13	Aug. 9	S. K. Clapp.		8.4	1.49	2.10	12.5	From bridge.
14	Aug. 23	H. K. Barrows.		40	0.95	2.55	38	Wading.
15	Sept. 25	H. K. Barrows. T. W. Norcross.		46	1.48	2.81	68	Wading.
16	Oct. 12	T. W. Norcross.		33	0.69	2.37	23	

MEAN DAILY GAGE HEIGHT, IN FEET, OF ZEALAND
RIVER, AT TWIN MOUNTAIN, N. H., FOR 1903.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.00	1.90	2.20	2.20
2	2.00	1.90	2.20	2.15
3	2.00	1.90	2.30	2.10
4	1.90	1.90	2.20	2.20
5	2.20	2.00	2.20	2.20
6	2.00	2.00	2.20	2.30
7	2.00	1.95	2.20	2.30
8	2.00	1.95	2.30	2.25
9	1.90	2.00	2.30	2.20
10	1.90	2.00	2.20	2.30
11	1.90	2.00	2.20	2.40
12	1.90	2.00	2.20	2.40
13	1.90	2.00	2.30	2.30
14	1.90	2.00	2.30	2.25
15	1.90	2.00	2.30	2.20
16	1.90	2.00	2.20	2.20
17	2.00	2.00	2.20	2.30
18	2.20	2.40	2.30	2.50
19	2.00	2.40	2.30	2.50
20	2.00	2.30	2.25	2.40
21	2.00	2.30	2.20	2.40
22	1.90	2.20	2.20	2.40
23	1.90	2.20	2.20	2.30
24	1.90	2.20	2.10	2.30
25	1.90	2.20	2.30	2.30
26	1.90	2.30	2.30	2.40
27	1.90	2.30	2.20	2.40
28	2.00	2.25	2.20	2.40
29	2.01	2.00	2.20	2.15	*
30	2.20	1.90	2.20	2.10	.....
31	2.20	.....	2.30	.....	.....

* Frozen December 29 to 31.

MEAN DAILY GAGE HEIGHT, IN FEET, OF ZEALAND
RIVER, AT TWIN MOUNTAIN, N. H., FOR 1904.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.40	3.50	2.40	1.84	1.84	1.74	4.34	3.34	.....
2	2.45	3.40	2.40	1.84	1.84	1.94	4.14	2.84	.....
3	2.30	3.30	2.30	1.74	1.94	1.94	3.44	2.74	.....
4	2.30	3.10	2.20	1.74	1.94	1.84	2.84	2.74	.....
5	2.40	3.00	2.20	1.74	2.04	1.84	3.04	2.64	.....
6	2.40	3.00	2.10	1.74	1.84	2.04	2.84	.....	.....
7	2.50	2.90	2.10	1.74	1.84	2.04	2.84	.....	.....
8	2.70	2.70	2.10	1.84	1.94	1.94	2.74	.....	.....
9	2.70	2.60	2.00	1.84	1.84	1.94	2.44	.....	.....
10	3.00	2.60	2.10	1.74	1.84	1.84	2.64	.....	.....
11	3.20	2.70	2.10	1.74	1.84	1.84	2.84	.....	.....
12	3.00	2.70	2.10	1.94	1.84	1.94	2.84	.....	.....
13	2.90	2.60	2.05	1.94	1.74	1.94	2.64	.....	.....
14	2.80	2.70	2.00	1.84	1.74	4.34	2.34	.....	.....
15	2.70	2.50	2.00	1.84	1.84	3.24	2.24	.....	.....
16	2.60	2.50	2.00	1.84	1.84	2.84	2.24	.....	.....
17	2.45	2.80	1.95	1.84	1.74	2.34	2.94	.....	.....
18	2.40	3.00	2.00	1.74	1.94	2.24	2.84	.....	.....
19	2.40	2.90	2.00	1.84	1.94	1.84	2.74	.....	.....
20	2.40	2.70	2.00	1.84	1.84	2.24	1.94	.....	.....
21	2.30	2.70	2.00	1.84	2.84	2.84	3.84	.....	.....
22	2.30	2.50	1.90	1.94	2.24	2.64	4.34	.....	.....
23	2.40	2.50	2.10	1.94	2.44	2.34	3.84	.....	.....
24	2.50	2.40	2.10	1.84	2.24	2.34	3.74	.....	.....
25	2.60	2.40	2.00	1.74	1.94	2.64	3.74	.....	.....
26	2.60	2.40	1.90	1.84	1.84	3.84	3.34	.....	.....
27	3.00	2.70	2.40	1.90	2.34	1.84	2.84	3.24	.....	.....
28	2.70	3.00	2.50	1.90	2.14	1.84	2.84	2.84	.....	.....
29	2.50	4.00	2.40	1.90	1.94	1.94	2.64	2.84	.....	.....
30	2.50	3.70	2.40	1.90	1.94	1.94	2.24	3.24	.....	.....
31	2.40	.....	2.30	.....	1.84	1.84	.....	3.24	.....	.....

RATING TABLE FOR THE ZEALAND RIVER AT TWIN MOUNTAIN, N. H., FROM AUGUST 29, 1903, TO DECEMBER 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
.....	.....	2.00	12	3.00	170	4.00	504
.. .....	.....	2.05	14	3.05	186	4.05	521
.....	.....	2.10	16	3.10	202	4.10	538
.....	.....	2.15	19	3.15	218	4.15	555
.....	.....	2.20	22	3.20	234	4.20	572
.....	.....	2.25	25	3.25	250	4.25	589
.....	.....	2.30	28	3.30	266	4.30	606
.....	.....	2.35	31	3.35	283	4.35	623
.....	.....	2.40	35	3.40	300	.....	.....
.....	.....	2.45	40	3.45	317	.....	.....
.....	.....	2.50	45	3.50	334	.....	.....
.....	.....	2.55	52	3.55	351	.....	.....
.....	.....	2.60	61	3.60	368	.....	.....
.....	.....	2.65	71	3.65	385	.....	.....
.....	.....	2.70	82	3.70	402	.....	.....
1.75	4	2.75	95	3.75	419	.....	.....
1.80	5	2.80	109	3.80	436	.....	.....
1.85	6	2.85	124	3.85	453	.....	.....
1.90	8	2.90	139	3.90	470	.....	.....
1.95	10	2.95	154	3.95	487	.....	.....

The above table is applicable only for open channel conditions. It is based upon discharge measurements made during 1903 and 1904. It is well defined between gage heights 1.9 feet and 3.6 feet. Outside these limits the table has been extended by interpolation. Above gage height 3.3 feet the rating curve is a tangent, the difference being 34 per tenth. The table has been applied to the nearest hundredth of a foot gage height.

ESTIMATED MONTHLY DISCHARGE OF ZEALAND RIVER
AT TWIN MOUNTAIN, N. H., FOR 1903 AND 1904.

(Drainage area, 14 square miles.)

Month.	Discharge in second-feet.			Run-off.			Rainfall. (Inches.)
	Maximum.	Minimum.	Mean.	Second-foot per square mile.	Depth in inches.	Per cent. of rainfall.	
1903.							
September.....	22	8	11	.79	.88	.....	.....
October.....	35	8	18	1.29	1.49	54	2.77
November.....	28	16	24	1.71	1.91	160	1.16
December 1-28..	45	16	29	2.07	2.16	.....	3.84
1904.							
January.....							1.94
February.....							0.48
March 27-31....	170	35	75	5.36	1.00	.....	2.53
April.....	504	28	98	7.00	7.81	560	1.40
May.....	334	28	101	7.21	8.31	280	2.93
June.....	35	8	15.0	1.07	1.19	.....	.....
July.....	30	4	7.4	.53	.61	19	3.19
August.....	121	4	13.0	.93	1.07	24	4.48
September.....	620	4	76	5.43	6.06	78	7.81
October.....	620	10	213	15.21	17.54	472	3.72

Ice, December 29, 1903, to March 26, 1904.

Rainfall records for Bretton Woods, N. H.

LITTLE RIVER AT TWIN MOUNTAIN, N. H.

This station, shown on Plate VI, was established January 21, 1904, by F. E. Pressey and was intended for a record of gage height only. The bed of the stream is too rough throughout all of its lower length for good current meter measurements. The river enters Ammonoosuc River from the south about a mile below Twin Mountain. Its basin is adjacent to that of Zealand River on the west and is of particular interest in this investigation from the fact that practically all forest cover has been removed. A statement in detail of the forest conditions on this drainage area will be found on page 143. The slopes are steep and there is no pondage or artificial storage.

A standard chain gage is attached to the floor of a highway bridge near the residence of Edward Lynch and about one mile above the mouth of the river. Length of chain is 12.92 feet. It is referred to bench marks as follows: (1) On floor of bridge near zero of gage, elevation 11.42 feet; (2) Cross cut on boulder, 32 feet from end of gage on right bank, elevation 9.05 feet. The gage is read twice daily by Edward Lynch.

LIST OF DISCHARGE MEASUREMENTS OF LITTLE RIVER,
AT TWIN MOUNTAIN, N. H.

No.	Date.	Hydrographer.	Width.—Ft.	Area of sec. Sq. ft.	Mean veloc. Ft. per sec.	Gage height. Feet.	Discharge. Sec.-ft.	Remarks.
	1904							
1	Aug. 23	H. K. Barrows.	22	26	2.04	5.58	53	Wading one mile below gage.
2	Sept. 25	H. K. Barrows, T. W. Norcross	22	32	2.06	5.75	66	Wading one mile below gage.
3	Oct. 12	T. W. Norcross	21	28	0.94	5.30	26	Wading one mile below gage.



GAGE ON LITTLE RIVER



LITTLE RIVER LOOKING UP-STREAM FROM GAGING STATION.

MEAN DAILY GAGE HEIGHT, IN FEET, OF LITTLE RIVER,
AT TWIN MOUNTAIN, N. H., FOR 1904.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	4.60	4.70	4.90	6.15	5.20	4.90	5.20	5.00	6.05	5.20	.....
2	.....	4.65	4.60	4.90	5.70	5.10	5.10	5.05	5.00	5.75	5.20	.....
3	.....	4.60	5.00	4.90	5.85	5.05	5.35	5.15	5.10	5.65	5.20	.....
4	.....	4.60	5.85	4.95	6.00	5.10	5.00	5.10	5.30	5.55	5.20	.....
5	.....	4.65	5.05	5.05	6.10	5.00	5.25	5.10	5.15	5.45	5.20	.....
6	.....	4.60	4.70	5.05	6.10	5.10	5.00	5.10	5.10	5.55	.....	.....
7	.....	5.10	4.65	5.45	6.05	5.00	4.95	5.00	5.10	5.45	.....	.....
8	.....	6.05	7.20	5.65	6.00	5.00	4.90	5.00	5.10	5.40	.....	.....
9	.....	4.80	5.00	6.15	6.00	5.00	4.90	5.00	5.10	5.35	.....	.....
10	.....	4.70	4.95	6.20	5.85	5.00	4.90	5.00	5.00	5.30	.....	.....
11	.....	4.60	4.80	5.80	6.20	5.00	4.90	5.10	5.00	5.30	.....	.....
12	.....	4.60	4.80	5.50	5.90	4.90	4.90	5.15	5.00	5.30	.....	.....
13	.....	4.60	4.70	5.45	5.85	4.90	5.25	5.10	5.00	5.30	.....	.....
14	.....	4.60	4.70	5.40	5.85	4.95	5.05	5.00	6.60	5.30	.....	.....
15	.....	4.60	4.70	5.35	5.95	5.45	5.00	5.20	5.85	5.20	.....	.....
16	.....	4.60	4.70	5.30	6.50	5.00	5.00	5.10	5.50	5.20	.....	.....
17	.....	4.60	4.70	5.35	6.25	5.00	4.90	5.10	5.35	5.20	.....	.....
18	.....	4.60	4.70	5.15	6.05	4.95	4.90	5.10	5.75	5.20	.....	.....
19	.....	4.60	4.70	5.00	6.20	4.90	4.90	5.00	5.40	5.20	.....	.....
20	.....	4.60	4.60	5.40	6.15	4.90	4.90	5.40	5.95	5.20	.....	.....
21	4.65	4.60	4.60	5.15	5.90	4.90	4.80	6.10	5.55	6.20	.....	.....
22	4.65	6.20	4.65	5.40	5.80	5.05	4.80	5.55	5.45	6.10	.....	.....
23	5.05	5.00	6.85	5.15	5.70	5.00	4.80	5.75	5.50	5.90	.....	.....
24	4.85	4.65	5.50	5.35	5.65	5.00	4.80	5.35	5.75	5.55	.....	.....
25	4.70	4.60	5.70	5.95	5.60	4.90	4.90	5.30	5.55	5.50	.....	.....
26	4.70	4.60	6.45	5.75	5.60	4.90	4.90	5.25	5.45	5.65	.....	.....
27	4.70	4.70	5.40	5.55	5.55	4.90	5.10	5.15	5.40	5.55	.....	.....
28	4.70	4.70	5.25	5.55	5.45	4.90	5.10	5.10	5.45	5.35	.....	.....
29	4.65	4.70	5.15	6.00	5.20	4.90	5.45	5.10	6.05	5.30	.....	.....
30	4.60	.....	5.20	6.20	5.25	4.45	5.15	5.05	.....	5.25	.....	.....
31	4.60	.....	5.20	.....	5.20	.....	5.00	5.00	.....	5.20	.....	.....

DISCUSSION OF RESULTS.

There have been presented in the preceding pages various hydrographic data for the White Mountain region, which are best considered in two parts. These are, first, the records for the drainage basin of Pemigewasset River, and, second, the data which have been collected in the several basins in this region since September, 1903. For the Pemigewasset Basin there are available the record of gage height of the river at Plymouth, extending from January 1, 1886, to date, the record of rainfall at Plymouth from June, 1888, to date, the record of rainfall at North Woodstock from September, 1903, to date, and 16 measurements of flow of the river. The record of gage height has been carefully made and there has been no change in the datum of the gage. The bed of the river at this place is practically permanent but may have shifted slightly near the left bank or within a short distance below the gaging station in such a way that conditions have changed somewhat at the gage and at the bridge from which the measurements of flow are made. The rating table for this station has been constructed from measurements of flow which have been made since September 4, 1903, but has nevertheless been applied to the gage readings since 1886. By so doing, estimates of flow, which otherwise could not have been made, are now available and it is believed that they do not contain serious error.

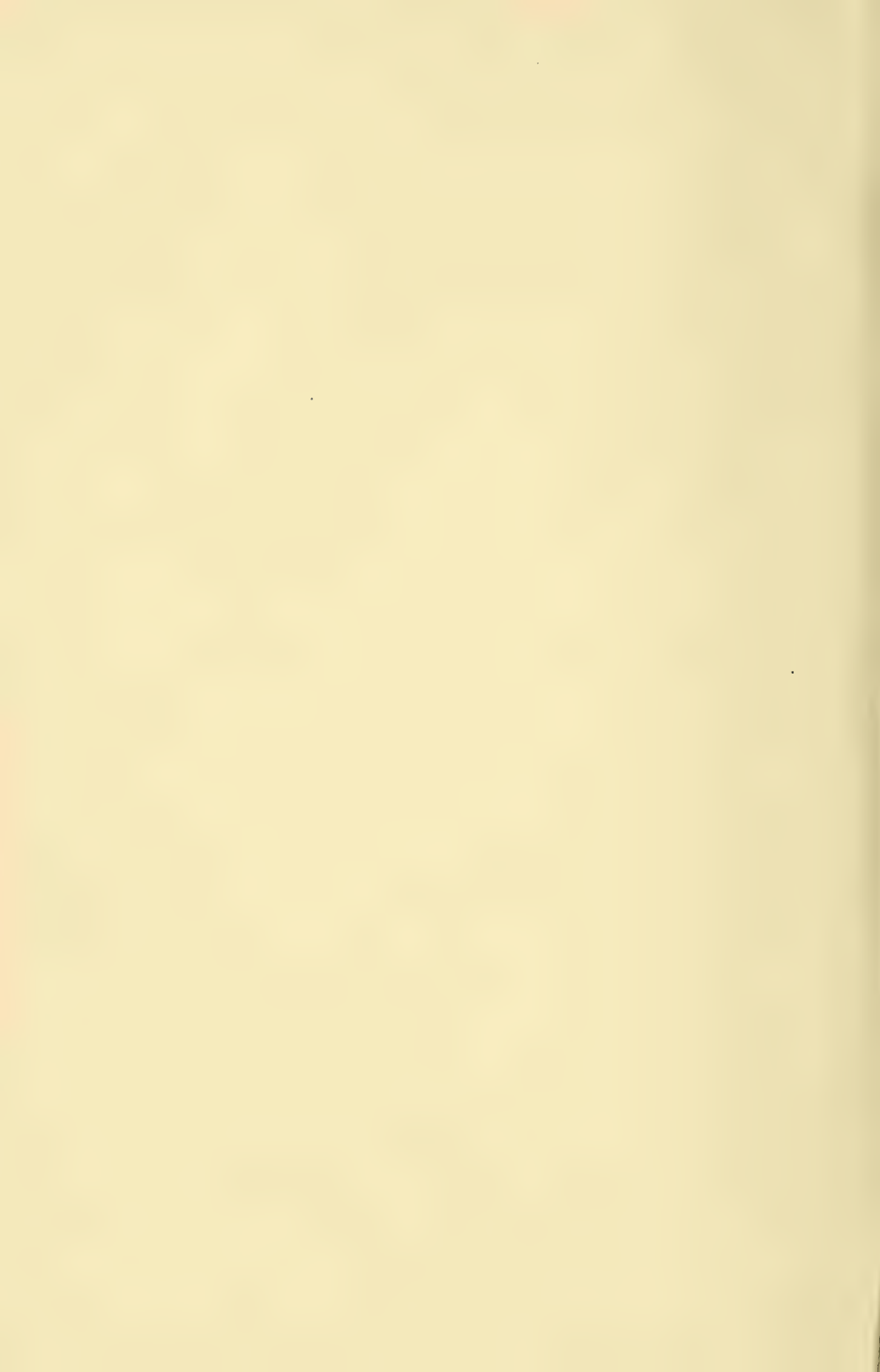
The record of rainfall for Plymouth, covering the 17 years from 1888 to date, has been used for comparison throughout the whole period, in preference to changing to the record obtained at North Woodstock during the last 15 months, even though the latter is doubtless more nearly representative for the basin. The former is consistent with itself and, while it does not represent truly the rainfall in the whole basin on account of the fact that the headwaters of the river flow from mountain areas on which the precipitation is greater than in the valleys, still it is a fair



MOUTH OF MOUNTAIN BROOK, EMPTYING INTO SACO RIVER NEAR GLEN.
BED OF GRAVEL AND ROLLING STONES.



LITTLE RIVER NEAR MOUTH.



assumption that rainfall collected at Plymouth will bear the same relation to that in the whole basin in one year as in another.

During the period of 19 years covered by the records of flow of the river considerable areas within the basin have been cut over for spruce or completely deforested.

In studying the data a table has been prepared, showing the ratio of run-off to rainfall in the five months from June to October, inclusive, for each year from 1888 to 1904. These five months have been chosen as the period in each year in which the ratios are probably most nearly comparable. The whole year could not well be considered on account of the fact that no rating curve has been constructed for ice conditions and consequently no definite estimate of the flow of the river during the winter could be made. Within the months from June to October there is little, if any effect, from snow storage, and consequently the run-off will most closely follow the rainfall. No account has been made of the condition of ground water, either at the beginning or end of this period in any year as no data were available.

PEMIGEWASSET RIVER AT PLYMOUTH, N. H.—TABLE
SHOWING RATIO OF RUN-OFF TO RAINFALL FROM
JUNE TO OCTOBER, INCLUSIVE, DURING THE PERIOD
1888 TO 1904.

Year.	Run-off. (Inches.)	Rainfall. (Inches.)	Per cent.
1888.....	14.39	21.90	0.66
1889.....	15.42	21.22	0.73
1890.....	18.31	23.57	0.77
1891.....	6.51	16.62	0.39
1892.....	12.34	22.27	0.55
1893.....	7.71	17.58	0.44
1894.....	5.87	17.40	0.34
1895.....	4.95	16.39	0.30
1896.....	8.75	18.51	0.47
1897.....	14.55	17.58	0.83
1898.....	6.58	18.97	0.35
1899.....	2.74	13.92	0.20
1900.....	4.36	13.63	0.32
1901.....	6.79	16.70	0.41
1902.....	14.49	21.57	0.67
1903.....	7.94	18.28	0.43
1904.....	7.48	20.02	0.37

This period of 17 years has been divided into three parts: 6 years, from 1888 to 1893, inclusive; 5 years, from 1894 to 1898, inclusive; and 6 years, from 1899 to 1904, inclusive. The average ratio of run-off to rainfall in the first period is .59; in the second period is .46 and in the third period is .40. It will be noticed that there are five years, 1888, 1889, 1890, 1897 and 1902, in which the ratio is abnormally high, possibly on account of exceptional conditions of ground water. Omitting these five years from the list and dividing the 12 remaining into two periods of six years each, we find the ratio of run-off to rainfall in the first is .42 and in the second is .35.

In the following table have been arranged in cubic feet per second per square mile the minimum recorded run-off in each year, the mean for the lowest month and the mean for the three lowest months. The years from 1896 to 1904 have been divided into three periods of six, seven and six years, respectively, and the average run-off in cubic feet per second per square mile for each period computed.

PEMIGEWASSET RIVER.

Year.	Minimum in cubic feet per second per sq. mile.	Mean for lowest month in cubic feet per second per sq. mile.	Average minimum for three low months in cubic feet per second per sq. mile.
1886.....	.30	.77	.85
1887.....	.57	.67	.79
1888.....	.57	1.11	1.73
1889.....	.39	1.75	2.24
1890.....	.44	1.88	2.45
1891.....	.24	.38	.63
1892.....	.30	.76	1.47
1893.....	.27	.39	.85
1894.....	.24	.28	.64
1895.....	.30	.48	.62
1896.....	.30	.80	.92
1897.....	.27	.42	.71
1898.....	.24	.47	.50
1899.....	.20	.32	.38
1900.....	.22	.35	.40
1901.....	.30	.42	.65
1902.....	.50	1.13	1.76
1903.....	.23	.40	.56
1904.....	.24	.55	.80
1st period (6 years).....	.42	1.09	1.45
2d period (7 years).....	.27	.51	.82
3d period (6 years).....	.28	.53	.76

The data collected in this basin, as shown above, would seem to indicate that there has been a slight decrease in the discharge of the river within the time considered.

The statistics which have been collected since September, 1903, in the several basins in the White Mountain region consist of (a) records of gage height at the following river stations: Saco River at Conway Center, Pemigewasset River at Plymouth, Israel River above South Branch, Jefferson Highlands, Israel River below South Branch, Jefferson Highlands, Ammonoosuc River at Bretton Woods, Zealand River near Twin Mountain and Little River near Twin Mountain; (b) about 15 current meter measurements of flow at each of these stations except that on Little River, where three measurements have been made, and (c) records of rainfall at Bartlett, Bretton Woods, Jefferson Highlands and North Woodstock.

The measurements of flow have been plotted, a rating curve drawn and a rating table constructed for each station except that on Little River. From these rating tables and the records of gage height, estimates of flow have been made, as shown on previous pages. In order that these estimates may be easily compared with each other, certain data have been arranged below in three tables, as follows: The first shows the ratio of run-off to rainfall by months for the different drainage areas; the second shows the minimum recorded discharge in cubic feet per second per square mile for each of the three months, July, August and September, 1904, and the third shows the mean run-off in cubic feet per second per square mile for each of the stations for the months of July, August and September, 1904.

TABLE SHOWING RATIO OF RUN-OFF TO RAINFALL, BY MONTHS, FOR DIFFERENT DRAINAGE AREAS.

	1903.	1904.						
	Oct.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
Saco.....	0.51	2.10	2.20	0.74	0.38	0.20	0.22	0.73
Pemigewasset.....	0.26	.....	1.70	0.43	0.15	0.27	0.30	0.94
Israel (above).....	0.51	1.50	2.00	0.65	0.23	0.36	0.52	1.34
Israel (between).....	0.29	1.30	1.80	0.68	0.27	0.27	0.47	1.30
Ammonoosuc.....	0.52	5.74	4.19	.....	0.26	0.27	0.34	1.12
Zealand.....	0.54	5.60	2.80	.....	0.19	0.24	0.78	4.72

TABLE SHOWING THE MINIMUM DAILY RUN-OFF IN CUBIC FEET PER SECOND PER SQUARE MILE FOR SEVERAL RIVER BASINS, FOR THE MONTHS OF JULY, AUGUST AND SEPTEMBER, 1904.

	Area.	July.	August.	September.
Saco.....	385	.41	.34	.31
Pemigewasset.....	615	.24	.35	.24
Israel (above).....	8.7	.25	.345	.61
Israel (below).....	21.2	.35	.47	.75
Ammonoosuc.....	34	.44	.53	.62
Zealand.....	14	.28	.28	.28

TABLE SHOWING MEAN MONTHLY RUN-OFF IN CUBIC FEET PER SECOND PER SQUARE MILE FOR SEVERAL RIVER BASINS, FOR THE MONTHS OF JULY, AUGUST AND SEPTEMBER, 1904.

	Area.	July.	August.	September.
Saco.....	385	.65	.72	1.07
Israel (above).....	8.7	.75	1.64	2.84
Israel (below).....	21.2	.82	1.42	2.69
Israel (between).....	12.5	.87	1.26	2.56
Ammonoosuc	34	.74	1.06	2.35
Zealand.....	14	.53	.93	5.43
Pemigewasset.....	615	.55	.97	1.70

The first table indicates clearly that the rainfall data are not representative of the precipitation in the various basins in which they have been collected. In each case the rain gages are located on comparatively low portions of the basins and it is certain that at times the rainfall in the mountain areas is much greater. The ratio of run-off to rainfall in October, 1904, for several of the stations, shows clearly that the precipitation must have been much larger within the mountain areas, and there is no assurance that the relation between the amounts collected and the average rainfall in the several basins is the same. The first table is, therefore, probably of little value. The other two tables, which show the run-off per square mile, give results which are more nearly comparable with each other.

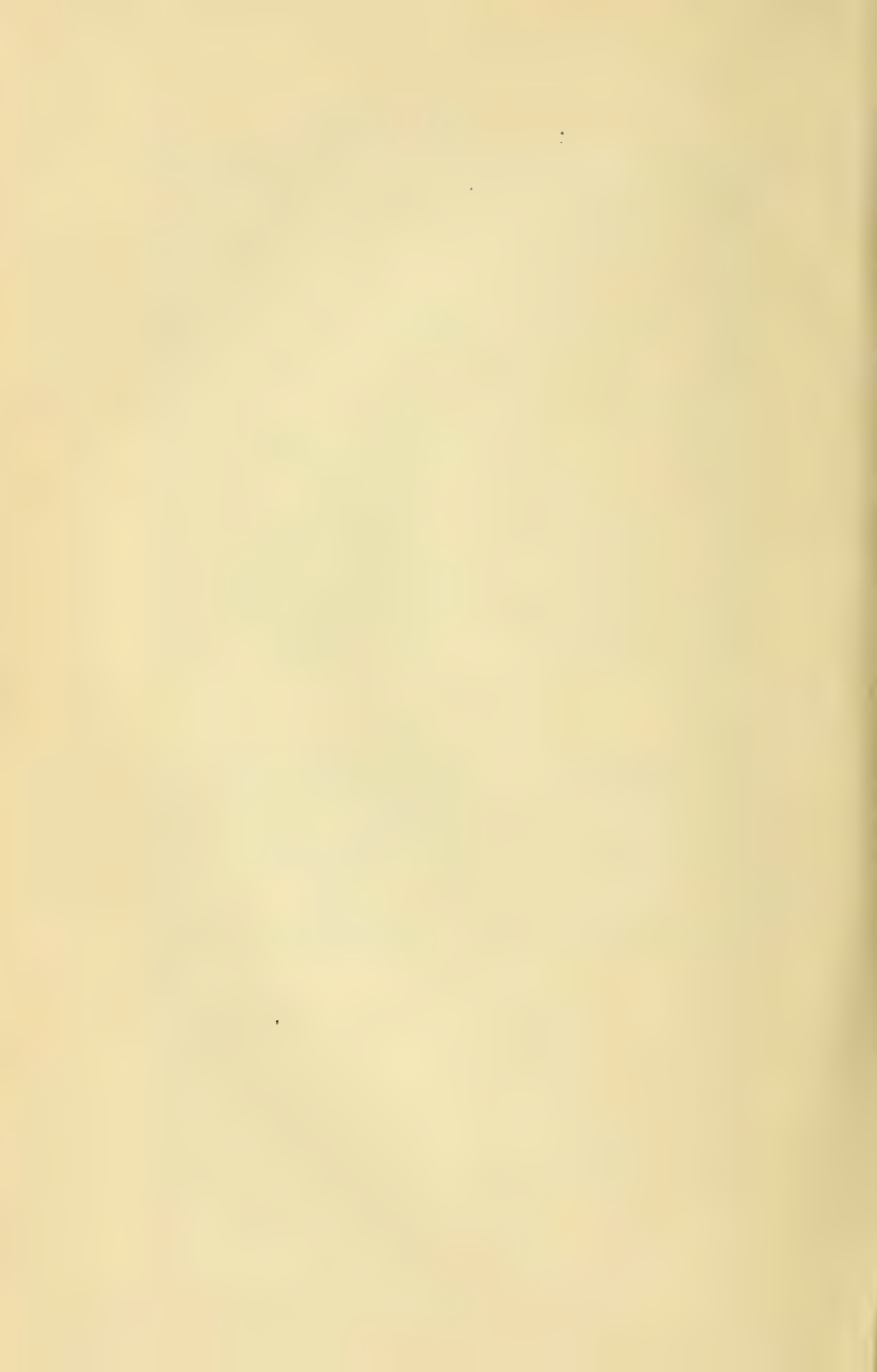
The basins of Ammonoosuc and Zealand Rivers are adjacent to each other and have in a general way the same topographic conditions. Ammonoosuc River, however, has its headwaters at considerably higher altitudes on the slopes of Mt. Washington. Its basin is, moreover, fairly well forested, as indicated in the definite statement of forest conditions, shown on another page. Zealand River basin has been largely deforested, but is now covered with a

young growth of deciduous trees. It is noticeable that the run-off per square mile from the Zealand basin is considerably less than that from the Ammonoosuc.

The two stations on Israel River give information as to the run-off from two parts of that basin. These two portions have the same general topographic conditions, but that which is tributary above South Branch has its headwaters at a higher altitude than that which is tributary to South Branch. The forest conditions in the two sections are not so much different from each other as was supposed to be the case at the time the river stations were established. It will be noticed, however, that the percentage of cleared and burned area is greater in the lower basin than in the upper, also the percentage of area that is in deciduous and scattering evergreen growth is greater. An examination of the run-off above indicates, as a rule, a greater minimum run-off per square mile in the lower basin than in the upper, but a slightly less run-off for the low water months.

CONCLUSIONS.

The data available for discussion are not sufficiently accurate nor do they cover time enough to warrant definite conclusions. A general consideration of all the statistics at hand, however, seems to indicate a slight decrease in the run-off as deforestation progresses. If the several river stations are maintained for a term of years, it is believed that data may be collected from which conclusions can be drawn.



REPORT
OF THE
FISH AND GAME COMMISSIONERS
OF
NEW HAMPSHIRE

TO THE
GOVERNOR AND COUNCIL

DECEMBER, 1904.

VOLUME III - - - PART IV.

CONCORD, NEW HAMPSHIRE.

1904.

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FISH AND GAME COMMISSIONERS' REPORT.

To His Excellency the Governor and the Honorable Council:

The Fish and Game Commissioners herewith submit their biennial report for the two years ending December 1, 1904. The last two years have been without exception the busiest two years during the whole existence of the commission. We have placed substantial screens (with funds appropriated for this purpose) at the outlets of some of our most important lakes, thus making it possible to retain the salmon and other game fish planted in these waters.

We have propagated more fish than ever before, and prosecuted more violations of the fish and game laws.

We have abandoned the old hatchery at Plymouth, and established a new one at Laconia, making but two hatcheries that are operated by the state to-day, where in the future our fish will be grown to fingerlings and yearlings before being planted in our streams.

The brook trout fishing has been excellent for the last two years; although we have had a severe drouth in the southern part of the state. The lake trout fishing in the Connecticut lakes, Winnepesaukee, Newfound, and other lakes, has been good. The land-locked salmon fishing has been excellent.

In Sunapee lake more large salmon were taken the last year than in any one year for twenty years. In the last twelve years our commission has never planted black bass in waters that contained salmon or trout. There is no doubt that in Sunapee lake where they are very plenty, they have done much to retard the increase of both trout and salmon.

The deer in New Hampshire are very plenty and are increas-

ing rapidly. At the last session of the legislature a law was passed requiring non-residents to pay ten dollars for a license to hunt deer in New Hampshire. We have received from licenses the past two years from non-residents \$2,470. We have convicted a number for hunting without a license; but as our law is framed it is almost impossible to convict if the party is inclined to be dishonest; for many we find out hunting with rifles will claim to be hunting bear, fox, hedgehog, or anything but deer. We would respectfully suggest that to make this law efficient, a non-resident should pay ten dollars for a license to hunt in New Hampshire. At the present time there are very few states remaining that do not require of a non-resident a license to hunt large game. Many states require a license to hunt game birds from non-residents. Some states require a license from residents of the state; a few do not allow any hunting in the state save by residents of the state.

We receive complaints frequently of damage done by deer. The deer question in southern New Hampshire is becoming a serious one. They have increased rapidly, and are found within easy rifle range of our largest cities. If the time comes when an open season is made to hunt deer in the lower counties there can be no question that many people will be killed; for with the high power rifles now in use, it is impossible to tell where a bullet will stop. The law that allows a person to kill any dog running deer or sheep should be amended, since any person having a grudge against a party owning fox hounds has only to get on a runaway where the hounds are chasing a fox, kill the hounds and claim they were running deer or sheep. Any old fox hunter will tell you it is a common thing for a fox when being run by a hound in a section where a flock of sheep is pastured, to run through the flock, in this way trying to throw the hound off his track.

Fox hunting is a royal sport. Many very valuable fox hounds are owned in New Hampshire, and should have better protection. For the half-blooded curs that are allowed to run at large in season and out we have no sympathy, and the sooner they are killed the better.

As far as we have been able to learn the deer that have been run down and killed by dogs have been killed by these half-bred dogs. One case in particular where a deer was run down and caught, one of the dogs was captured while tearing the flesh and eating it from one of the hams while the doe was still alive. Something should be done to prevent these dogs from running at large, especially through the close season. The open season on the northern hare should be shortened to March first instead of April first. For in March the deer, hare and rabbit are usually carrying their young.

The partridge shooting in New Hampshire has not been as good for the last two seasons as usual, although in the north country, where they are hunted but very little compared to what they are in the southern section, they were reported very plenty this last fall.

The woodcock shooting in some sections has been fine. We are more firmly convinced now than ever before that the open season on woodcock and partridge should be October and November.

The quail, which had become quite plenty in the southern section of the state, owing to the severe winter of 1903 have been about annihilated. We would suggest that a small appropriation be made to restock our covers with quail.

At the last session of the legislature an appropriation of \$7,500 was made to establish a fish hatchery station on the Durkee brook at Laconia. We have purchased the land; built a substantial dam, a fish hatchery building, cottage and barn for our superintendent. We have expended, up to the present time \$6,834, leaving a balance of \$665.98. The balance will be used to perfect the station. We also received at the same session of the legislature the following amounts to screen the following bodies of water:

Lake Winnisquam at East Tilton, \$2,500; expended, \$2,475; balance, \$25.

Stinson lake at Rumney, \$400; all expended.

Crystal lake at Enfield, \$200; all expended.

Highland lake at Andover, \$100 ; all expended.

Forest lake at Whitefield and Dalton, \$300 ; all expended.

Tewksbury pond at Grafton, \$75 ; expended, \$50 ; balance, \$25.

Armington pond at Piermont, \$200 ; expended, \$156.71 ; balance, \$43.29.

Penacock lake at Concord, \$100 ; expended, \$81.88 ; balance, \$18.12.

Sunapee lake, \$400 ; expended, \$364.08 ; balance, \$35.92.

Merrymeeting pond at New Durham, Center pond at Stoddard, Pleasant pond at New London, and Crystal lake at Gilmanton.

These appropriations have not been expended for the following reasons :

The dam owners at Merrymeeting pond would not allow us to draw the water sufficiently to establish the screen ; Center pond, Stoddard, we did not consider of importance enough to screen ; Pleasant pond, New London, and Crystal lake, Gilmanton, are difficult bodies of water to screen and it would be impossible to screen them for the appropriations.

NATHANIEL WENTWORTH,

CHAS. B. CLARKE,

MERRILL SHURTLEFF,

Fish and Game Commissioners.

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John W. Avirett, Cumberland.

C. L. Vincent, Snow Hill.

Jessie W. Downey, Newmarket.

MASSACHUSETTS.

Joseph W. Collins, Boston.

Edward A. Brackett, Winchester.

John W. Delano, Marion.

MICHIGAN.

Freeman B. Dickerson, Detroit.

Charles D. Joslyn, Detroit.

George M. Brown, Saginaw.

Grant M. Morse, Portland.

MINNESOTA.

Uri L. Lamprey, St. Paul.
W. P. Hill, Fairmont.
D. W. Meeker, Moorhead.
H. G. Smith, Winona.
Sam F. Fullerton, St. Paul.

MISSOURI.

Frank P. Yenawine, St. Joseph.
J. M. Shepler, Milan.
Richard Porter, Paris.
George J. Champman, St. Louis.
J. H. Zollinger, Boonville.
A. J. D. Burford, Burfordsville.

MONTANA.

W. F. Scott, Helena.

NEBRASKA.

Ezra P. Savage, Lincoln.
George B. Simpkins, Lincoln.
W. J. O'Brien, South Bend.
George L. Carter, North Platte.

NEW HAMPSHIRE.

Nathaniel Wentworth, Hudson Center
Charles B. Clarke, Concord.
Merrill Shurtleff, Lancaster.

NEW JERSEY.

William A. Halsey, Newark.
Benjamin P. Morris, Long Branch.
Richard T. Miller, Camden.

NEW YORK.

Timothy L. Woodruff, Brooklyn.
D. C. Middleton, Watertown.
Charles H. Babcock, Rochester.

NORTH CAROLINA.

S. L. Patterson, Raleigh.
T. K. Bruner, Raleigh.
B. W. Kilgore, Raleigh.
H. H. Brimley, Raleigh.

OHIO.

J. L. Rodgers, Columbus.
Paul North, Cleveland.
Duff W. Greene, Dayton.
Thomas B. Baxton, Cincinnati.
Edwin M. Kennedy, McConnelsville.
George C. Blaukner, Columbus.
J. C. Porterfield, Columbus.

OKLAHOMA TERRITORY.

J. A. Gould, El Reno.

OREGON.

T. T. Geer, Salem.
F. I. Dunbar, Salem.
Charles S. Moore, Salem.
H. G. Van Dusen, Astoria.
H. A. Webster, Clackamas.
L. P. W. Quimby, Portland.

PENNSYLVANIA.

Fish Commissioners.

S. B. Stillwell, Scranton.
John Hamberger, Erie.
Henry C. Demuth, Lancaster.
James W. Correll, Easton.
William E. Meehan, Philadelphia.
Henry C. Cox, Wellsboro.

Game Commissioners.

Colman K. Sober, Lewisburg.
William M. Kennedy, Allegheny.
Charles B. Penrose, Philadelphia.
J. O. H. Denny, Ligonier.
James H. Worden, Harrisburg.
William Heywood Myers, Williamsport.

RHODE ISLAND.

Fish Commissioners.

Henry T. Root, Providence.
William P. Morton, Johnston.
J. M. K. Southwick, Newport.
Charles W. Willard, Westerly.
Adelbert Roberts, Woonsocket.
Albert David Mead, Providence.
William H. Boardman, Central Falls.

Game Commissioners.

Fenver H. Peckham, Jr., Providence.
Walter R. Stiness, Warwick.
Edwin R. Lewis, Westerly.
William H. Thayer, Bristol.
Alexander O'D. Taylor, Newport.
John H. Flanagan, Secretary, Providence.

TEXAS.

J. P. Kibbe, Port Lavaca.

UTAH.

John Sharp, Salt Lake City.

VERMONT.

Henry G. Thomas, Stowe.

Edward A. Davis, Bethel.

Charles C. Gilmore, Swanton.

VIRGINIA.

John W. Boudoin, Bloxom.

George B. Keezell, Keezleton.

Henry M. Tyler, Richmond.

Robert J. Camp, Franklin.

Seth F. Miller, Riverside.

WASHINGTON.

Timothy Kershaw, Whatcom.

WEST VIRGINIA.

E. F. Smith, Hinton.

WISCONSIN.

Edwin E. Bryant, Madison.
E. A. Birge, Madison.
Calvert Spensley, Mineral Point.
James J. Hogan, La Crosse.
Henry D. Smith, Appleton.
Currie G. Bell, Bayfield.
William J. Starr, Eau Claire.
James Nevin, Madison.

WYOMING.

D. C. Nowlin, Big Piney.

DISTRIBUTION OF FRY AND FINGERLINGS.

1903.

PLYMOUTH STATION—BROOK TROUT FRY.

Streams in the town of	Northfield	.	.	.	20,000
" " "	Penacook	.	.	.	10,000
" " "	Hudson	.	.	.	10,000
" " "	Keene	.	.	.	20,000
" " "	Munsonville	.	.	.	10,000
" " "	Marlow	.	.	.	10,000
" " "	Belmont	.	.	.	10,000
" " "	Wilton	.	.	.	20,000
" " "	Lyndeborough	.	.	.	10,000
" " "	Peterborough	.	.	.	10,000
" " "	East Jaffrey	.	.	.	20,000
" " "	Plymouth	.	.	.	10,000
" " "	Waterville	.	.	.	25,000
" " "	Hopkinton	.	.	.	10,000
" " "	Hancock	.	.	.	20,000
" " "	Hinsdale	.	.	.	10,000
" " "	Winchester	.	.	.	20,000
" " "	Nelson	.	.	.	10,000
" " "	Pembroke	.	.	.	10,000
" " "	Epsom	.	.	.	20,000
" " "	Pittsfield	.	.	.	10,000
" " "	Gilmanton	.	.	.	10,000
" " "	Manchester	.	.	.	10,000
" " "	Goffstown	.	.	.	10,000
" " "	Raymond	.	.	.	10,000

Streams in the town of	Dover	20,000
" " "	Canterbury	10,000
" " "	Loudon	10,000
" " "	Milford	10,000
" " "	Wilton	10,000
" " "	Warner	20,000
" " "	Salisbury	10,000
" " "	Bradford	20,000
" " "	Newport	20,000
" " "	Franklin	30,000
" " "	Grafton	40,000
" " "	Andover	30,000
" " "	Canaan	30,000
" " "	Etna	10,000
" " "	Laconia	20,000
" " "	Bristol, Alexandria and	
	Hebron	40,000
" " "	Wentworth	20,000
" " "	(Pikes) Haverhill	20,000
" " "	New Durham	10,000
" " "	Farmington	20,000
" " "	Middleton	20,000
" " "	Rochester	15,000
" " "	Sanbornville	20,000
" " "	Ossipee	10,000
" " "	Wolfeborough	20,000
Olivarian Branch		10,000
Brooks in Merrimack County, Merrimack County Fish		
and Game League		20,000
Bear Brook in the town of Allentown		30,000
Loon Lake in the town of Plymouth, adult fish from		
Hatchery.		

COLEBROOK STATION—BROOK TROUT FRY.

Streams in the town of	Errol	30,000
“ “ “	Columbia and Colebrook	25,000
Big Diamond pond in the town of	Stewartstown	25,000
Little Diamond pond in the town of	Stewartstown	20,000
Connecticut lake in the town of	Pittsburg	20,000

BROOK TROUT FINGERLINGS.

Streams in the town of	Dalton	1,200
“ “ “	Whitefield	1,200
“ “ “	Bethlehem	2,400
“ “ “	Littleton	2,400
“ “ “	Lisbon	1,200
“ “ “	Bath	1,200
“ “ “	Haverhill	2,400
“ “ “	(Pikes) Haverhill	2,400
“ “ “	Warren	1,200
“ “ “	Plymouth	2,400
“ “ “	Laconia hatchery pond	1,200
“ “ “	Groveton	3,600
“ “ “	Stratford	1,200
“ “ “	Berlin	2,400
“ “ “	Gorham	2,400
“ “ “	Shelburne	1,200
“ “ “	Randolph	1,200
“ “ “	Launcester	3,000
“ “ “	Jefferson	1,200
Brooks in the vicinity of	Fabyan's	1,200
“ “ “	Mount Pleasant	1,200
“ “ “	Crawford	1,200
“ “ “	Sawyer river	1,200
Brooks in the town of	Bartlett	1,200
“ “ “	Jackson	2,400
“ “ “	Conway	2,400

BROOK TROUT YEARLINGS.

Big Diamond pond in the town of Stewartstown .	1,200
Little Diamond pond in the town of Stewartstown .	1,000

PLYMOUTH STATION—LAKE TROUT FRY.

Asquam lake in the town of Ashland	80,000
Merry Meeting lake in the town of New Durham .	20,000
Bow lake in the town of Strafford	20,000
Winnepesaukee lake	70,000
Stinson lake in the town of Rumney	10,000
Tarleton lake in the town of Piermont	20,000
Lake Winnisquam	30,000
Lake Massabesic in Manchester and Auburn	40,000
Newfound lake	140,000

LAND-LOCKED SALMON FRY.

Newfound lake	40,000
Winnepesaukee lake	25,000
Sunapee lake	20,000

COLEBROOK STATION—LAKE TROUT FRY.

Connecticut lake	25,000
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1904.

COLEBROOK STATION.—FRY.

Winnepesaukee lake	Salmon .	30,000
Connecticut lake	Salmon .	10,000
Greno pond	Salmon .	12,000
Asquam lake	Lake trout .	30,000
Winnepesaukee lake	Lake trout .	38,000
Connecticut lake	Lake trout .	25,000

Little Diamond pond . . .	Brook trout .	20,000
Big Diamond pond . . .	Brook trout .	40,000
Greno pond	Brook trout .	25,000
Streams in town of Colebrook .	Brook trout .	10,000
Streams in town of Columbia .	Brook trout .	10,000
Streams in town of Stewartstown	Brook trout .	10,000
Streams in town of Colebrook .	Rainbow trout	18,000
Connecticut lake	Rainbow trout	18,000
Connecticut lake	Brown trout .	10,000

LACONIA STATION.

Lake Winnepesaukee . . .	Lake trout fry	53,000
Newfound lake	Lake trout fry	30,000
Laconia	Brook trout .	3,000

FINGERLINGS.

Lake Winnepesaukee . . .	Salmon .	3,500
Durkee brook, Laconia . . .	Salmon .	1,500
Winnepesaukee lake . . .	Salmon .	1,800
Pleasant pond, New London .	Salmon .	1,800
Tewksbury pond, Grafton . .	Salmon .	1,200
Corbett's pond, Windham . .	Salmon .	1,500
Newfound lake, Bristol . . .	Salmon .	3,000
Tarleton lake, Piermont . . .	Salmon .	1,200
Stinson lake, Rumney . . .	Salmon .	1,800
Crystal lake, Enfield . . .	Salmon .	1,800
Sunapee lake	Salmon .	3,000
Massabesic lake, Auburn . . .	Salmon .	2,400
Penacook lake, Concord . . .	Salmon .	1,800
Durkee brook, Laconia . . .	Steel head trout	1,800
Tewksbury pond, Grafton . .	Steel head trout	1,800
Streams in Canaan	Brook trout .	600
Durkee brook, Laconia . . .	Brook trout .	1,800

PROSECUTIONS.

Andrew La Valley, Belmont, killing partridge in close season, fined \$10 and 60 days imprisonment; 60 days suspended.

George B. Abbott, Ellsworth, killing one deer in close season, fined \$50 and 60 days imprisonment; 60 days suspended.

Charles Downing, Ellsworth, killing one deer in close season, fined \$50 and 60 days imprisonment; 60 days suspended.

William Swett, Andover, dog chasing deer, fined \$5.

Charles Hubbard, Jr., Piermont, hunting deer with a dog, fined \$50 and 60 days imprisonment; 60 days suspended.

William Conway, Croydon, killing deer in close county, fined \$100 and 3 months imprisonment; \$50 of fine and 3 months imprisonment suspended.

Henry Broughton, Croydon, assisting Conway, fined \$1.

Leroy Woodman, Alton, dog killing deer, fined \$20.

J. B. Cally, Franklin, spearing lake trout, fined \$10 and 30 days imprisonment; 30 days suspended.

Arthur Wells, Dorchester, dog killing deer, fined \$50.

Bert Wells, Dorchester, hunting deer with a dog, fined \$50 and 6 months imprisonment; 6 months suspended.

C. A. Mitchell, Lowell, Mass., killing one deer in close season, fined \$50.

H. G. Gove, Groton, killing two deer in close county, fined \$200 and 6 months imprisonment; \$150 of fine and 6 months imprisonment suspended.

Daniel G. Moulton, Moultonborough, snaring partridge, fined \$40 and 6 months imprisonment; sent to jail and served his sentence.

G. W. Jepson, Wolfeborough, killing song birds, fined \$50.

George W. Jones, Charlestown, fishing with set lines, fined \$10.

Trua Johnson, Concord, fishing with a trawl, fined \$10.

Henry Johnson, Concord, fishing with a trawl, fined \$10.

A. E. Proctor, Concord, catching short pickerel, fined \$20.

Elmer Sanborn, Chester, taking two raccoon, fined \$20.

H. S. Rowe, Derry, killing bird other than a game bird, fined \$25.

J. C. Perley, Enfield, killing deer in close season, fined \$100.

R. Proctor, Croydon, killing one raccoon in close season, fined \$10.

Stephen Codman, Boston, taking woodcock out of the state, fined \$50 and 60 days imprisonment; 60 days imprisonment suspended.

Dr. E. A. Codman, Boston, taking partridge out of the state, fined \$50 and 60 days imprisonment; 60 days imprisonment suspended.

James Alexander, Newport, killing rabbit in close season, fined \$5.

Peter Avery, Manchester, killing raccoon in close season, fined \$10.

Walter E. Cox, Woodstock, Vt., hunting deer without a license, fined \$100 and 60 days imprisonment; imprisonment suspended.

Charles S. Winslow, Lowell, Mass., hunting deer without a license, fined \$100 and 60 days imprisonment; imprisonment suspended.

G. E. Bond, Newport, killing a fawn, fined \$50 and 6 months imprisonment; the imprisonment suspended.

Charles Babbitt, Lebanon, killing a fawn, fined \$50 and 6 months imprisonment; the imprisonment was suspended.

Milton Conner, Cambridge, Vt., hunting deer without a license, fined \$50 and 60 days imprisonment; the imprisonment was suspended.

H. B. Casey, Canaan, killing a fawn, fined \$50.

K. E. Elliott, Canaan, killing a fawn, fined \$50.

George Severance, Grafton, killing a fawn, fined \$50.

H. E. Woodbury, New Boston, killing an otter in close season, fined \$25.

George Dudley, Methuen, Mass., hunting with a ferret, fined \$10.

Ike LaCross, Methuen, Mass., hunting with a ferret, fined \$10.

John Davidson, Newcastle, not having his name on lobster can, fined \$50.

E. Newton, Portsmouth, short lobsters, fined \$30.

H. A. Clark, Portsmouth, short lobsters, fined \$10.

Joseph Whitten, Wolfeborough, killing song birds, fined \$20.

James E. Graham, Canobie Lake, killing song birds, fined \$5.

Joseph Hart, Pelham, hunting rabbits with a ferret, fined \$10.

Jacob Ayers, Pelham, hunting rabbits with a ferret, fined \$10.

F. W. Dunklee, Lowell, Mass., taking partridge out of the state, fined \$20.

James J. Eavens, Lowell, Mass., taking partridge out of the state, fined \$20.

B. J. Eavens, Lowell, Mass., taking partridge out of the state, fined \$20.

Charles S. Stone, Lowell, Mass., taking partridge out of the state, fined \$20.

F. S. Carleton, Sanbornton, killing one raccoon in close season, fined \$10.

William S. Buck, Portland, Me., hunting deer without a license, fined \$100.

Herbert Edwards, Portland, Me., hunting deer without a license, fined \$100.

D. C. Ayers, Epsom, trapping, fined \$20.

R. Pabineau, Nashua, fishing closed waters, fined \$20.

John Renfrew, Plymouth, killing fawn, fined \$25.

Alfred L. Elliott, Brookline, dogs killing deer, fined \$100.

Joseph Towle, Bartlett, killing deer in closed season, fined \$100.

Charles Kittridge, Bartlett, killing fawn, fined \$100.

John Renfrew, Plymouth, dog killing deer, fined \$25.

Timothy Chauncy, Albany, killing deer in close season, 6 months in jail.

Neal Tibado, Albany, killing deer in close season, fined \$300.

George Tibado, Albany, killing deer in close season, fined \$300.

John Tibado, Albany, killing deer in close season, fined \$300.

J. Albert Cole, Albany, killing deer in close season, fined \$100.

F. H. Elliott, Rumney, dog chasing deer, second offence, fined \$5.

Charles B. Barton, Albany, illegal fishing, fined \$10.

Irving Blake, Albany, illegal fishing, fined \$10.

Augustus Evans, Stewartstown, illegal fishing, 60 days in jail.

William L. Evans, Stewartstown, illegal fishing, 60 days in jail.

Joseph Taboude, Stewartstown, illegal fishing, 60 days in jail.

Philiosse Auger, killing deer, 6 months in jail.

Walter Simonds, Colebrook, killing deer, fined \$50.

B. F. Fernald, Colebrook, illegal fishing, fined \$25.

William Loud, Bartlett, killing raccoon in close season, fined \$10.

Frank Mansfield, Conway, hunting deer in close season, fined \$25.

Leslie Mellow, Conway, dogging deer, 60 days in jail.

Leavitt Hale, Errol, killing deer, fined \$100.

Colby Chase, Errol, killing deer, fined \$100.

Albert Johnson, Errol, killing deer, fined \$100.

James Reynolds, Colebrook, killing deer, fined \$100.

William Hardy, Colebrook, killing fawn, 60 days and fined \$25.

Fred B. Hayes, Colebrook, illegal fishing, fined \$10.

Joseph Astle, Colebrook, illegal fishing, fined \$10.

Christopher Conn, Dixville, using gill net, fined \$10.

Joseph Conn, Dixville, using gill net, fined \$10.

- J. A. Towle, Bartlett, killing deer, bound over.
Dennis Sweeney, Auburn, fishing closed waters, fined \$20.
Sam Grover, Manchester, fishing closed waters, fined \$20.
Frank Burton, Manchester, fishing closed waters, fined \$20.
Omer Vena, Manchester, fishing closed waters, fined \$20.
Frederick Sarser, Manchester, fishing closed waters, fined \$20.
P. A. Ahern, Manchester, fishing closed waters, fined \$20.
G. P. Wellington, Keene, killing song birds, fined \$25.
J. P. Mever, Keene, killing song birds, fined \$50.
Thomas Peno, Nashua, killing song birds, fined \$50.
Dr. C. H. Goodwin, Concord, killing song birds, fined \$20.
Thomas McLaughlin, Laconia, short lobsters, fined \$40.
John Brisaird, Rollinsford, short lobsters, fined \$100.
Steve Nichols, Wolfeborough, short trout, fined \$25.
J. Martin, Sunapee, chasing deer with boat, fined \$10.
J. Newhall, Sunapee, chasing deer with boat, fined \$10.
George W. Lanper, Hooksett, selling trout, 60 days in jail and fined \$50.
James Warren, Franklin, fishing closed waters, fined \$20.
E. Nelson, Franklin, fishing closed waters, fined \$20.
Arthur Cushing, Goffstown, selling trout, fined \$50.
Eugene Sweet, Goffstown, selling trout, fined \$50.
Arthur Raymond, Newbury, short bass, fined \$10.
C. W. Hopkins, Windsor, Vt., putting sawdust in waters, fined \$50.
W. Callahan, Pittsburg, killing deer in close season, fined \$50.
George W. Goodrow, Boston, Mass., illegal fishing, fined \$20.
W. Parker, Boston, Mass., illegal fishing, fined \$20.
Bert Nutting, Pittsburg, illegal fishing, fined \$20.
John Huggins, Pittsburg, killing deer in close season, fined \$50.
Winfield Scott, Winchester, killing woodcock in close season, fined \$20.
G. G. Skinner, Manchester, fishing closed stream, fined \$20.
Elmer E. Legro, Peabody, Mass., hunting deer without license, fined \$100.

Granville Smith, Sandwich, snaring partridge, fined \$10 and 60 days in jail.

Granville Smith, Sandwich, shipping partridge out of state, fined \$100 and 6 months in jail.

A. F. Stearns, Errol, killing deer, fined \$25.

Jerry Sharky, Errol, short trout, fined \$15.

C. H. Carter, Berlin, short fish, fined \$5.

Freeman Merrill, Berlin, short fish, fined \$5.

Melvin Fox, Berlin, hunting deer, fined \$25.

George Cilley, Berlin, hunting deer, fined \$25.

David York, Berlin, killing deer, fined \$50.

George C. Demeritt, Errol, killing deer, fined \$100.

William J. Ormsby, Colebrook, killing partridge close season, fined \$15.

Ernest E. Demeritt, Colebrook, illegal fishing, fined \$10.

C. H. Stevens, Berlin, illegal fishing, fined \$10.

George McWaine, Berlin, illegal fishing, fined \$10.

John Humphrey, Berlin, illegal fishing, fined \$10.

W. W. Thompson, Hanover, dog killing deer, fined \$50.

Waters that are closed against Winter Fishing.

CORRECTED TO DECEMBER 1, 1904.

Gorham pond in the town of Dunbarton, five years from November 26, 1903.

Reed's pond in the town of Merrimack, five years from November 26, 1903.

Sanborn's pond in the town of Loudon, five years from February 3, 1904.

Conway lake, or Walker pond, in the towns of Conway and Eaton, five years from February 3, 1904.

Sandogardy pond in the town of Northfield, five years from March 11, 1904.

Deering reservoir in the town of Deering, five years from March 11, 1904.

Robinson's pond in the town of Hudson, five years from March 11, 1904.

Otter lake in the town of Greenfield, five years from March 21, 1904.

Baboosic lake in the towns of Amherst and Merrimack, five years from March 11, 1904.

Ashuelot pond in the town of Washington, five years from March 11, 1904.

Long, Rocky and Flint ponds in the town of Hollis, five years from March 11, 1904.

Crystal lake in the town of Enfield, five years from March 11, 1904.

Ayer's pond in the town of Barrington, five years from January 18, 1900.

Lake Warren in the town of Alstead, five years from January 20, 1900.

Stocker, Butternut, Anderson's, Eastman and Miller's ponds in the town of Grantham, five years from February 6, 1900.

Lyme or Post pond in the town of Lyme, four years from February 4, 1901.

All ponds in the town of Kingston, five years from December 30, 1901.

All ponds in the towns of Sutton, Bradford, Newbury, except Sunapee lake, five years from February 22, 1902.

All ponds in the towns of Sandown and Windham, Policy pond in the towns of Windham and Salem, Cub pond in the towns of Sandown and Danville, Angle pond in the towns of Sandown and Hampstead, five years from February 22, 1902.

All ponds in the towns of Hillsborough and Newton, Plaistow, Danville, Hampstead, Salem, Atkinson, Derry, Brookline and Francestown, five years from February 24, 1902.

Suncook pond in the town of Northwood, Kelly pond in the town of New Hampton, Trury pond in the town of Bow, Webster lake in Franklin, the waters, bays, or basins supplied by the Winnepesaukee river, between dam and East Tilton and Tilton and Belmont railroad bridge over said river, five years from February 24, 1902.

Newfound lake in the towns of Bristol, Bridgewater, Hebron and Alexandria is closed against ice-fishing for land-locked salmon, also against ice-fishing for lake trout, except from January 1 to February 1, both days inclusive.

Highland lake in the town of Andover, five years from February 25, 1902.

Nut's pond in Manchester, five years from May 30, 1902.

Pleasant pond in the town of Deerfield, five years from December 10, 1902.

All ponds in the town of Hancock, five years from December 10, 1902.

Indian pond in the towns of Piermont and Orford, five years from December 10, 1902.

Demerritt's, Keniston and North River ponds in the town of Nottingham, five years from December 10, 1902.

All ponds in the town of Henniker, five years from December 10, 1902.

Tuckee pond in the town of Salisbury, five years from December 10, 1902.

Bagley pond in the town of Warner, five years from December 10, 1902.

All ponds in the town of Pelham, five years from December 10, 1902.

Bow lake in the towns of Strafford and Northwood, five years from December 10, 1902.

Chestnut pond in the towns of Pittsfield and Epsom, five years from December 10, 1902.

Wild Goose and Shaw's ponds in the towns of Pittsfield and Barnstead, five years from December 10, 1902.

Berry, Eaton and Blake ponds in the town of Pittsfield, five years from December 10, 1902.

Breed pond in the towns of Harrisville and Nelson, five years from December 10, 1902.

Mascoma lake in the towns of Enfield and Lebanon, five years from December 10, 1902.

Spectacle pond in the towns of Enfield and Grafton, five years from December 10, 1902.

Hart's pond in the town of Canaan, five years from December 10, 1902.

Baptist, Chalk, Morgan and Star ponds in the town of Springfield, five years from December 10, 1902.

Goose pond in the towns of Canaan and Hanover, five years from December 10, 1902.

Turtle pond in Concord, five years from December 10, 1902.

Big and Little Turkey ponds in Concord and Bow, five years from December 10, 1902.

Long pond in the town of Webster, five years from December 10, 1902.

Otter pond in the towns of Sunapee and New London, five years from December 10, 1902.

Cold pond in the towns of Acworth and Unity, five years from November 26, 1903.

Harvey lake in the town of Northwood, five years from November 26, 1903.

Kendall's pond in the town of Londonderry, five years from November 26, 1903.

Colburn's pond in the town of Walpole, five years from November 26, 1903.

All ponds in the town of Stoddard, five years from November 26, 1903.

Otternick pond in the town of Hudson, five years from November 26, 1903.

Ossipee lake in the towns of Ossipee, Freedom and Effingham, five years from November 28, 1903.

Pleasant pond in the town of New London, five years from December 3, 1903.

Lakin's pond in the town of Hooksett, five years from December 3, 1903.

Grafton pond in the town of Grafton, five years from December 7, 1903.

Chapin's pond in the towns of Claremont and Newport, five years from January 6, 1904.

Burton pond in the town of Lyndeborough, five years from February 3, 1904.

Pearl lake, or Mink pond, in the town of Lisbon, five years from February 3, 1904.

Crystal lake or Longee's pond in the town of Gilmanton, five years from December 3, 1904.

LIST OF LAKES AND PONDS.

LIST OF LAKES AND PONDS.

LIST OF LAKES AND PONDS IN NEW HAMPSHIRE, EXCLUSIVE OF THE GREAT LAKES, WINNIPESAUKEE, SUNAPEE, OSSIPEE, CONNECTICUT, ETC., WITH THE SIZE, CHARACTER OF THE BOTTOM, AND SPECIES OF FISH FOUND IN THEM.

[Words in italics designate kinds put in ponds by the commissioners.]

TOWNS.	Ponds.	Acres.	Bottom.	Fish.
Acworth.....	Cold.	40	Rocky.....	<i>Bass</i> (1877), perch, pickerel, pouts etc.
Alstead.....	Caldwell.....			
".....	Warren's.....	234	Various.....	Perch, pickerel, pouts, etc.
Alton.....	Half-Moon.....	320		<i>Bass</i> (1877).
".....	Woodman's.....			
".....	Hill's.....			
".....	Place's.....			
Amherst.....	Babboosic.....	300	Various.....	<i>Bass</i> (1873), pickerel, perch
".....	Little.....	2	Muddy.....	Pickerel.
".....	Daimon.....	10	Muddy.....	Pickerel, pouts.
Andover.....	Bradley.....	100	Muddy.....	Pickerel, perch.
".....	Highland Lake.....	400	Various.....	<i>Bass</i> , pickerel, perch, pouts.
".....	Horseshoe and Andover.....	100	Muddy.....	Pickerel, perch, pouts.
".....	Elbow.....	300	Hard.....	Pick'l, perch, pouts.
".....	Cold.....	20	Muddy.....	Trout.
Antrim.....	Gregg.....	100	Various.....	<i>Bass</i> (1873).
".....	Dudley.....	31	Rocky.....	Perch, pouts.
".....	Tilton.....	10	Muddy.....	Pouts, eels.
Auburn.....	Massabesic.....	2500	Various.....	<i>Bass</i> (1868), pickerel, perch.
Albany.....	Chocorua.....			
".....	Whitten's.....			
Alexandria.....	Foster.....			
".....	Goose.....			
Allenstown.....	Bear Hill.....	15	Mud and sand.....	Pickerel, perch.
Barnstead.....	Huntress.....			
".....	Brindle.....			
".....	Suncook.....			<i>Bass</i> (1877).
".....	Brandy.....			
Barrington.....	Ayer's.....			<i>Bass</i> (1877).
".....	Long.....			
".....	Round.....			
".....	Nippo.....			
".....	Mendum's.....			<i>Bass</i> (1877).
".....	Swain's.....			
".....	Bodge's.....			
Bath.....	Muddy.....	30	Muddy.....	Pickerel, perch.
Belmont.....	Pout.....	15	Various.....	Pouts.
Benton.....	Beaver Meadow.....			Trout.

LIST OF LAKES AND PONDS.—*Continued.*

TOWNS.	Ponds.	Acres.	Bottom.	Fish.
Berlin.....	Head.....	...	...	...
Bow.....	Truree.....	50	Mud and moss...	Pickereel, perch, pouts, eels.
Boscawen.....	Long.....	300	Rocky and sandy	Pick'l, perch, pouts.
Boyce's.....	Boyce's.....	10	Muddy.....	Pick'l, perch, pouts.
Bradford.....	Bradford.....	275	Rocky and sandy	<i>Bass</i> (1873), <i>lake trout</i> (1876), <i>L. L. salmon</i> (1876), pickereel.
".....	Todd's.....	200	Muddy.....	Pickereel, perch, pouts, eels.
Brookfield.....	Cook's.....	350	Rocky.....	<i>Blue-backed trout</i> , <i>California salmon</i> .
".....	Mill.....	...	...	...
Brookline.....	Potanipus.....	600	Mud and sand...	Pickereel, perch, etc.
".....	Peasley.....	150	Mud and sand...	Pickereel, perch, etc.
Canaan.....	Heart.....	1200	Sandy.....	<i>Bass</i> (1874), pickereel.
".....	Goose.....	1000	Muddy.....	Pout, pickereel, <i>bass</i> (1877).
".....	Clark.....	700	Muddy.....	Pout, pickereel.
".....	Mud.....	40	Muddy.....	Pout, pickereel.
".....	Ford's.....	50	Chalky.....	Trout.
Campton.....	Avery's.....	100	Sand and mud...	Pick'l, perch, trout.
".....	Yeaton.....	5	Muddy.....	Pickereel, perch.
Canterbury.....	Clough's.....	30	Sandy.....	<i>Bass</i> (1871), pickereel, barbel, pouts.
".....	Shaker (5).....	60	...	Pick'l, perch, pouts.
".....	Crane-Neck.....	8	Muddy.....	Pick'l, perch, pouts.
".....	Forest.....	20	Muddy.....	Pick'l, perch, pouts.
".....	Morrill.....	20	Sandy.....	Pick'l, perch, pouts.
".....	Reservoir.....	35	Muddy.....	Pickereel, eels, perch, pouts.
Center Harbor..	Long.....	...	...	...
".....	Bear.....	...	...	...
".....	Hawkins.....	...	...	...
".....	Otter.....	...	...	...
Chatham.....	Kimball's.....	100	Sand and mud...	Pickereel.
".....	Mountain.....	100	Sandy, rocky...	Trout.
".....	Province.....	10	Sandy, rocky...	Trout.
Chesterfield.....	Spofford's.....	1500	White sand...	<i>Bass</i> , pike, pickereel.
".....	Lily.....	30	Muddy.....	Pouts.
".....	Indian.....	20	Muddy.....	Pouts.
Chichester.....	Pinkfield.....	...	...	[nally trout.
Clarksville.....	Clarksville.....	200	...	Pick'l, pouts, origi-
".....	Carr.....	30	...	...
Columbia.....	Lime.....	30	Lime.....	No fish.
".....	Fish.....	50	Muddy.....	Trout, eels.
Concord.....	Penacook Lake...	340	Sandy, rocky...	<i>Salmon</i> , lake trout, perch, <i>bass</i> .
".....	Turtle.....	...	...	...
".....	Turkey.....	20	Muddy.....	Perch.
".....	Little.....	...	...	...
Conway.....	Walker's.....	2560	Rocky.....	Pickereel, perch, pouts, eels.
".....	Pequawket.....	640	Muddy.....	Pickereel, perch, pouts, eels.
Croydon.....	Long.....	...	...	<i>Smelt</i> (1877).
".....	Rocky-Bound.....	...	...	<i>Bass</i> ('70), <i>smelt</i> ('77)
".....	Governor's.....	...	...	<i>Bass</i> (1876).
".....	Spectacle.....	...	...	...
Danbury.....	Bog.....	...	...	...
".....	School.....	...	...	...
Danville.....	Long.....	...	...	...
".....	Cub.....	100	Muddy.....	Pick'l, perch, pouts.
Deerfield.....	Pleasant.....	1100	Sandy.....	Pick'l, <i>bass</i> , perch.
".....	Moulton's.....	...	...	...

LIST OF LAKES AND PONDS.—*Continued.*

Towns.	Ponds.	Acres.	Bottom.	Fish.
Deering	Dudley's	20	Rocky	Perch, pouts.
"	Pecker's			
"	Fulton's	10	Muddy	Pouts, eels.
"	Gregg's	100	Muddy, rocky...	Pick'l, perch, pouts.
Derry	Beaver	147	Sandy	Bass, pick'l, perch, pouts.
"	Upper Shield's			
"	Lower Shield's			
Dixville	Trout			Trout.
"	Moose			Trout.
Dorchester	Norris	300	Muddy	Pickerel.
"	Trout	50	Sandy	Trout.
"	McCutchins	70	Sandy	Trout, pouts.
"	Town-Line	150	Rocky	Pickerel, pouts.
"	Mudgett	100	Muddy	Pickerel.
Dublin	Mud			
"	Monadnock	600	Rock and sand	Trout.
"	Farnum			
"	White			
Dummer	Lary	3	Muddy	Trout, pick'l, suckers, dace.
"	Dummer	125	Rocky	Trout, suckers, dace.
"	Corner	50	Rocky, sandy	Trout, suckers, dace.
"	Little Dummer	15	Muddy	Trout, suckers, dace.
Dunbarton	Kimball's	100	Sandy, rocky	Pick'l, eels, horned pouts.
"	Long	80	Muddy	Perch, shiners, flat-sides.
"	Gorham	75	Muddy	Bass (1875).
"	Purgatory			Pick'l, perch, eels.
Eaton	Robertson's			
"	Long			
Effingham	Province	1000		
"	Leech's			
Ellsworth	Ellsworth	100		
Enfield	Mascoma Lake	500	Rocky	Bass ('68-'69), pike-perch ('77), pickerel, pouts, eels, suckers.
"	East Pond	350	Rocky	Bass ('74), pickerel, pouts, eels, suckers.
"	Spectacle	150	Rocky	Bass ('75), pouts, sunfish, pick'l, perch.
"	George	50	Muddy	Pout, pickerel, sunfish, perch.
"	Eastman's	75	Rocky	Pick'l, sunfish, perch.
"	Cold	50	Rocky	Bass, ('74), pickerel, sunfish, perch.
Epsom	Chestnut	35	Rock and sand	Pickerel, bream, perch, shiners.
"	Round	1	Mud and sand	Pickerel, bream, perch, shiners.
"	Odiorne's	15	Mud and sand	Pickerel, bream, perch, pouts.
Errol	Aker's			
"	Mann			
Epping	Carpenter's			Bass (1877).
Fitzwilliam	South	300	Sandy	Pickerel, perch, bl'ck bass.
"	Scipp	200	Muddy	Pickerel, perch.
"	Rockwood's	100	Sandy	Pickerel, perch.
"	Collins	30	Muddy	Pick'l, perch, smelts (1876).
Francestown	Haunted	216	Sandy	Bass ('76), pickerel, perch.
"	Pleasant	216	Sandy	Bass ('76), pickerel, perch.

LIST OF LAKES AND PONDS.—Continued.

TOWNS.	Ponds.	Acres.	Bottom.	Fish.
Franklin	Webster Lake ...	100	Sandy	Bass ('68), pickerel, salmon, trout, p'ch.
Franconia	Echo Lake			Bass (1868) trout.
Freedom	Trout			
"	Danforth	560	Muddy	Pick'l, perch, shin'rs
"	Danforth Bay ...	1000	Muddy, sandy ...	Pick'l, perch, shin'rs
"	Ossipee	1500	Muddy, sandy ...	Pick'l, trout, shin'rs.
"	Swazey	250	Muddy	Pick'l, perch, shin'rs
Fremont	Loons			
Gilford	Little	50	Muddy	Pick'l, perch, pouts, eels.
"	Saltmarsh			
Gilmanton	Loon			Black bass.
"	Lougee			Black bass.
"	Young's			
"	Rocky			
"	Round			
"	Shellcamp			
Gilsum	Converse	2	Muddy	Trout.
Goshen	Rand's	100	Rocky, sandy ...	Bass, pick'l, pouts.
Grafton	Grafton	100	Rocky	Bass, pick'l, pouts.
"	Kilton	100	Muddy	Perch, pick'l, pouts.
"	Tewksbury's ..	50	Various	Bass (1875), pickerel.
"	Mud	20		Pickerel, pouts.
"	Half-Moon	50	Sandy	Pickerel, pouts.
Grantham	Grass			
"	Butternut	175	Muddy	Pickerel, eels, perch, pouts.
"	Stocker	200	Muddy, sandy ...	Pickerel, eels, perch, pouts, smelts (1877), bass ('76), suckers, dace.
"	Eastman	300		Pickerel, eels, perch, pouts.
"	Cranberry			Pick'l, perch, pouts.
"	Leavitt			Pick'l, perch, pouts.
"	Miller	175		Pick'l, perch, pouts, bass (1874).
Greenfield	Pollard's	300	Muddy, sandy ...	Pick'l, perch, pouts.
"	Gould's	150	Sandy	Pickerel, perch.
"	Cragin's	150	Muddy, sandy ...	Pickerel, pouts.
"	Hogback	10	Muddy	Pouts.
"	Bridge's	10	Muddy	Perch, pouts.
Groton	Spectacle	100	Rocky and sandy	Pickerel, perch.
"	Little	4	Muddy	Pickerel.
Hampstead	Angle	400	Rocky	Pickerel, perch, pouts, black bass.
"	Island	900	Rocky	Bass (1877), pickerel, perch, pouts, etc.
"	Wash	350		Bass (1877), pickerel, perch, pouts, etc.
Hancock	Half-Moon	25	Muddy	Pick'l, pouts, perch.
"	Long	800	Rocky and sandy	Pick'l, perch, pouts, dace.
"	Norway	40	Muddy	Pick'l, pouts, perch.
"	Jugernet	15	Rocky	Pickerel, pouts.
"	Hunt	75	Rocky	
Harrisville	Harrisville	120	Rocky	Pick'l, perch, pouts, dace.
"	Breed	100	Rocky and sandy	Pick'l, perch, pouts, dace.
"	North	360	Rocky	Pick'l, perch, pouts, dace.
"	Norway			
"	Pratt			
Haverhill	Wood's	1	Muddy	Perch, pouts.

LIST OF LAKES AND PONDS.—*Continued.*

TOWNS.	Ponds.	Acres.	Bottom.	Fish.
Haverhill.....	French.....	5	Muddy, sandy...	Perch, pouts.
Henniker.....	Long.....	175	Various.....	<i>Bass</i> (74), <i>smelt</i> (76), pick'l, perch, pouts.
".....	Gove's.....	80	Hard.....	<i>Bass</i> (74), <i>smelt</i> , eels.
".....	Whittaker.....	100	Various.....	<i>Bass</i> (74), pickerel, perch.
".....	Upper.....	75	Various.....	<i>Bass</i> (74), pickerel, perch, etc.
".....	Cranny.....	100	Hard.....	<i>Bass</i> (74), pickerel, perch, etc.
".....	Middle.....	50	Various.....	<i>Bass</i> (74), pickerel, perch, etc.
".....	Pleasant.....	75	Hard.....	<i>Bass</i> (74), pickerel, perch, etc.
".....	Grassy.....	60	Hard.....	<i>Bass</i> (74), pickerel, perch, etc.
".....	Clark's.....	12	Muddy.....	<i>Bass</i> (74), pickerel, perch, etc.
".....	Morrill's.....	30	Muddy.....	Pickerel, trout.
".....	Camp-Swamp....	40	Various.....	<i>Bass</i> (75), pickerel, trout, etc.
".....	Little.....	15	Various.....	Pickerel, perch.
Hill.....	Poverty.....	50	Muddy.....	Pout, formerly trout.
".....	Weeks.....	.....	Hard.....	Pickerel, perch.
Hillsborough...	Contention.....	125	Sandy.....	Pick'l, perch, pouts.
".....	Loon.....	225	Rocky and sandy	Pickerel, perch, <i>bass</i> (1874), pouts.
".....	Campbell's.....	85	Rocky and sandy	Pick'l, perch, pouts.
".....	Merrill's.....	.....	.....	Pickerel, perch, <i>bass</i> (1874), pouts.
".....	Mud.....	20	Muddy.....	Pickerel, pouts.
Holderness.....	Squam Lake.....	6400	Rock and sand...	Trout, cusk, pick'l, perch, eels, <i>smelt</i> , barbel, <i>land-locked</i> <i>salmon</i> (1877).
".....	Little Squam...	150	Rock and sand...	Same as Squam L'ke
".....	White Oak.....	80	Muddy.....	Pickerel, pouts, eels, barbel.
Hollis.....	Flints.....	70	Sandy, muddy...	Pick'l, pouts, perch.
".....	Long.....	50	Sandy.....	Pick'l, pouts, perch, bream.
".....	Pennichuck.....	150	Sandy, muddy...	<i>Bass</i> (77), pickerel, pouts, perch, bream.
".....	Rocky.....	75	Sandy and rocky	Pick'l, pouts, perch, bream.
Hooksett.....	Lakin's.....	1000	Muddy.....	<i>Bass</i> (77), pickerel, pouts, perch, bream.
".....	Hinman's.....	125	Muddy.....	Pick'l, pouts, perch, bream.
".....	Sawyer's.....	200	Muddy.....	Pick'l, pouts, perch, bream.
".....	Clay.....	100	Muddy.....	Pick'l, pouts, perch, bream.
".....	Pinnacle.....	50	Gravelly.....	Perch, shiners.
Hopkinton.....	Smith's.....	30	Muddy.....	Pickerel, pouts.
".....	Clement's.....	300	Sandy.....	Pick'l, pouts, perch.
".....	Grassy.....	100	.....	Pick'l, pouts, perch.
".....	Rolfe's.....	200	Sandy, muddy...	Pick'l, pouts, perch.
".....	Chase.....	250	Sandy, muddy...	Pickerel, <i>bass</i> (75), pouts, perch.
Hudson.....	Little Massabesic	175	Rocky, muddy...	Pick'l, pouts, perch.
".....	Otternick.....	75	Sandy, muddy...	Pick'l, pouts, perch.
Jaffrey.....	Thorndike.....	50	Rocky, muddy...	Pickerel, pouts.
".....	Gilmore.....	200	Sandy and rocky	Pick'l, form'lly trout

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres.	Bottom.	Fish.
Jaffrey.....	Frost.....	100	Muddy.....	Eels, pouts.
.....	Long.....	400	Sandy, muddy...	Pick'el, pouts, perch, suckers.
Jefferson.....	Cherry.....	100	Muddy.....	Pick'el, pouts.
.....	Safety.....	10	Sandy.....	Trout.
Kensington.....	Muddy.....	1	Muddy.....	Horned pouts.
Keene.....	Wilson's.....	.....	Muddy.....	Bass (1868).
Kingston.....	Great.....	400	Sandy.....	Pick'el, perch, pouts, black bass.
".....	Country.....	300	Sandy, muddy...	Pick'l, perch, pouts.
".....	Little.....	50	Muddy.....	Pick'el, perch, pouts, black bass.
".....	Half-Moon.....	50	Muddy.....	Pick'l, perch, pouts.
Lancaster.....	Baker's.....	50	Muddy.....	Pick'l, perch, eels.
.....	Martin Meadow.	300	Various.....	Pick'l, perch, eels, pouts.
Laconia.....	Pick'el.....	30	Muddy.....	Pick'el, perch, pouts, eels.
Lee.....	Wheelwright's...	165	Rock, mud, and gravel.....	Bass, pike-perch, white perch.
Lempster.....	Dodge's.....	110	Various.....	Pick'el, pouts, eels, sunfish.
".....	Long.....	200	Various, rock and sand.....	Pick'el, pouts, eels, sunfish.
".....	Sand.....	225	Muddy.....	Pick'el, pouts, eels, sunfish.
".....	Beaver.....	18	Various.....	Pick'el, perch.
".....	Hurd.....	20	Sandy, muddy...	Pick'el, pouts, perch, etc.
Lincoln.....	Bog.....	100	Sandy, muddy...	Trout.
.....	Tamarack.....	50	Sandy, muddy...	Trout.
.....	Loon.....	50	Sandy, muddy...	Trout.
Lisbon.....	Streeter.....	100	Muddy.....	Pick'el.
".....	Perch.....	50	Sandy.....	Pick'el, perch.
".....	Mink.....	100	Rocky.....	Smelt (1877), bass (1877), pick'l, dace, minnows.
".....	Young.....	200	Rocky.....	Pick'el, perch.
".....	Henry.....	10	Muddy.....	Pick'el.
Littleton.....	Partridge.....	100	Hard.....	Bass (1873), pick'el, perch.
Litchfield.....	Darrah.....	14	Sandy.....	Pick'l, perch, pouts.
".....	Rich.....	4	Sandy.....	Perch, pouts.
".....	Common.....	5	Sandy.....	Perch, pouts.
Londonderry.....	Scoby's Upper.....	.....	.....	.....
.....	Scoby's Lower.....	.....	.....	.....
Loudon.....	Clough's.....	50	Gravel.....	Bass, pick'l, perch.
".....	Crooked.....	25	Rock and sand.....	Pouts, pick'l, perch.
".....	Hot-Hole.....	25	Rock and sand.....	Bass (1870), pick'el, barbel.
".....	Rollins's.....	.....	.....	.....
Lyman.....	Young's.....	200	Rocky.....	Pick'l, pouts, suck'rs
".....	Dodge's.....	100	Muddy.....	Pick'l, pouts, dace.
".....	Round.....	50	Muddy.....	Pick'l, pouts, dace.
".....	Cowin.....	50	Muddy.....	Pick'l, pouts, dace.
Lyme.....	Reservoir.....	200	Sandy.....	Pick'el, perch.
".....	Post's.....	200	Sandy.....	Pick'el, perch.
".....	Mud.....	100	Muddy.....	Trout.
Lyndeborough..	Benton's.....	20	Muddy.....	Pouts.
.....	Badger's.....	15	Muddy.....	Pick'el.
Manchester.....	Nutt's.....	25	Sandy.....	Pick'l, perch, pouts.
".....	Stevens.....	30	Muddy.....	Pick'l, perch, pouts.
".....	Mosquito.....	20	Muddy.....	Pick'l, perch, pouts.
Madbury.....	Barbadoes.....	.....	.....	.....

LIST OF LAKES AND PONDS.—Continued.

TOWNS.	Ponds.	Acres.	Bottom.	Fish.
Madison	Silver Lake.....	2500		<i>Bass</i> (1877), <i>land-locked salmon</i> .
"	Pea Porridge.....			
"	Davis.....			
Marlborough.....	Clapp's.....	30	Muddy.....	Pick'l, pouts, suc'rs.
"	Stone.....	100	Rock and gravel.	Pick'l, perch, pouts, shin'rs, suckers.
"	Meeting-house.....	50	Muddy.....	Pick'l, pouts, shin'rs, suckers.
"	Cummings.....	45	Muddy.....	Pick'l, pouts, shin'rs etc.
Merrimack.....	Spaulding's.....	75	Sand and mud...	Pick'l, perch, pouts, bream, <i>bass</i> (1877).
Meredith.....	Measeley.....	1500	Sandy and rocky	Pick'l, perch, pouts, <i>bass</i> .
"	Wickwash.....	700	Muddy.....	Pick'l, perch, pouts.
"	Forest.....	50	Muddy.....	Pick'l, perch, pouts.
"	Robinson's.....	60	Sandy and rocky	Pick'l, perch, pouts.
Milan	Cedar.....	300	Muddy.....	Pick'l, perch, pouts, eels.
"	Nay's.....	200	Muddy.....	Pick'l, perch, pouts, eels.
Milton	Tri-Echo Lake.....	2000	Various	<i>Bass</i> , pick'l, perch, pouts, eels, <i>white perch</i> , <i>California salmon</i> .
"	Jones River.....			<i>California salmon</i> .
Middleton.....	Reservoir.....	500	Sand and mud...	<i>Bass</i> (1877), pickerel, and a few trout.
Millsfield.....	Millsfield.....			Trout.
"	Moose.....			Trout.
"	Rock.....			Trout.
Moultonboro'.....	Long.....	500	Sandy.....	<i>Bass</i> (1873), pickerel.
"	Red Hill.....			<i>Bass</i> (1873).
"	Berry.....	160	Muddy.....	Pickerel.
Nelson.....	Munsonville.....			
"	Center.....			
"	Spoonwood.....	170		Pick'l, perch, pouts, dace.
"	Tolman.....	41		Pick'l, perch, pouts, dace.
Nashua.....	Round.....	25	Sand and mud...	Pick'l, perch, bream.
New Boston.....	Railey's.....	15	Rocks and mud..	Pick'l, perch, pouts.
"	Beard's.....	11	Muddy.....	Pick'l, perch, pouts.
"	Joe English.....			
"	Shirley.....	10	Muddy.....	Pick'l, perch, pouts.
"	Negro.....	14	Muddy.....	Pick'l, perch, pouts.
New Durham.....	Shaw's.....	100	Gravel.....	Perch, pouts.
"	March's.....	150	Gravel and mud.	Pickerel, pouts.
"	Merry meeting	1050	Gravelly.....	Trout, pick'l, cusk, <i>land-locked salmon</i> .
"	Cold Rain.....	50	Muddy.....	Pickerel. [<i>mon</i>].
"	Downing's.....	75	Mud and gravel.	Pouts, pickerel.
New Hampton.....	Forest.....			
"	Jackson's.....			
New Ipswich.....	Pratt's.....	50	Rocky.....	Pickerel, pouts.
"	Hoar's.....	5	Muddy.....	Pickerel, pouts.
New London.....	Clark's.....	50	Muddy.....	Pick'l, perch, pouts, eels.
"	Messer's.....	100	Muddy.....	Pick'rl, eels, perch, pouts.
"	Otter.....	125	Sandy.....	Pick'l, pouts, suc'rs.
"	Pleasant.....	800	Sandy.....	<i>Bass</i> (1870), pickerel, chub, eels, perch.

LIST OF LAKES AND PONDS.—Continued.

TOWNS.	Ponds.	Acres.	Bottom.	Fish.
New London...	Little Sunapee...	1200	Sandy.....	Pick'l, pouts, suc'rs.
Northfield.....	Chestnut.....	.....	.....	.....
".....	Sondogardy.....	.....	.....	.....
Northwood.....	Suncook.....	400	Sandy.....	Bass (1877), pickerel, perch, pouts, eels.
".....	Jenness.....	300	Sandy.....	Bass (1874), pickerel, perch, pouts, eels.
".....	Long.....	.....	.....	.....
".....	Little Bow.....	100	Muddy.....	Pick'l, perch, pouts, eels.
".....	Harvey.....	200	Sand and mud...	Bass (1877), pickerel, perch, pouts, eels.
".....	Durgin.....	.....	.....	.....
".....	Knowlton.....	100	Sandy.....	Pick'l, perch, pouts, eels.
Nottingham....	Pawtuckaway... 1000	.....	.....	Bass (1877).
".....	Quincy.....	300	.....	.....
Odell.....	Trio.....	.....	.....	.....
".....	Cranberry.....	.....	.....	.....
Orange.....	Orange.....	.....	.....	.....
Orford.....	Brackett's.....	.....	.....	.....
".....	Rocky.....	.....	.....	.....
".....	Turtle.....	.....	.....	.....
".....	Baker's Upper...	.....	.....	.....
".....	Reservoir.....	.....	.....	.....
".....	Indian.....	.....	.....	.....
Ossipee.....	White.....	100	Sandy.....	Smelt.
".....	Duncan.....	100	Sandy.....	Pickel, pouts.
".....	Garland's.....	300	Rocky.....	Trout, pouts.
".....	Connor.....	500	Rocky.....	Trout, pouts.
".....	Bean.....	40	Rocky.....	Trout, pouts.
".....	Dan's Hole.....	500	Rocky, very deep	Trout.
Pelham.....	Long.....	600	Rock and sand...	Pick'l, perch, pouts.
".....	Gunpas.....	100	Rock and mud...	Pick'l, perch, pouts.
".....	White's.....	50	Sand and gravel.	Pick'l, perch, pouts.
".....	Island.....	200	Sandy.....	Pick'l, perch, pouts.
Peterborough...	Cunningham.....	30	Sandy.....	Pick'l, perch, pouts.
".....	Pierce.....	10	Sandy.....	Pick'l, form'ly trout.
Piermont.....	Lily.....	50	Muddy.....	Pickel.
".....	Fellows.....	500	Various.....	Pick'l, perch, pouts, eels, black bass.
".....	Tarleton's Large	900	Various.....	Pick'l, perch, pouts, eels.
".....	Tarleton's Small	500	Various.....	Pick'l, perch, pouts, eels, black bass.
Pittsfield.....	Berry's.....	25	Sand and gravel.	Pick'l, perch, bream, bass (1874).
".....	Eaton's.....	8	Rock and sand...	Pick'l, perch, bream, pouts.
".....	Wild Goose.....	350	Muddy.....	Pick'l, perch, pouts.
".....	Blake.....	5	Muddy.....	Pick'l, perch, pouts.
".....	Horse.....	1	Muddy.....	Perch.
Plainfield.....	Moses'.....	40	Muddy.....	Pouts, suckers.
Randolph.....	Safety.....	75	Muddy.....	Trout.
Raymond.....	Jones.....	800	Sandy.....	Bass (1877), pickerel, perch.
".....	Governor's.....	400	Muddy.....	Pickel, perch.
".....	Pecker.....	100	Muddy.....	Pickel, perch.
Richmond.....	Cass.....	100	Muddy.....	Pick'l, perch, pouts.
".....	Sandy.....	70	Sand and rock...	Pick'l, perch, pouts.
Rindge.....	Pecker.....	30	Rocky.....	Pick'l, p'rch, shin'rs, po'ts, sunfish, eels.
".....	Long.....	1000	Various.....	Same as above.
".....	Grassy.....	100	Muddy.....	Same as above.

LIST OF LAKES AND PONDS.—*Continued.*

Towns.	Ponds.	Acres.	Bottom.	Fish.
Rindge.....	Bullet.....	30	Sandy.....	Pick'l, p'r'l, shin'rs, pouts, sunfish, eels.
".....	Pool.....	80	Muddy.....	Same as above.
".....	Manomonack.....	2600	Various.....	Same as above.
".....	Durel.....	30	Muddy.....	Same as above.
".....	Emerson.....	140	Rocky.....	Same as above.
".....	Perley.....	300	Rocky.....	Same as above.
".....	Hubbard.....	300	Various.....	Same as above.
".....	Smith.....	60	Muddy.....	Same as above.
".....	Mud.....	15	Muddy.....	Same as above.
".....	Little.....	12	Muddy.....	Same as above.
".....	Loon.....	260	Muddy.....	Pick'ere'l, perch, roach, bass (1877).
Rochester.....	Ricker's.....			
".....	Romia.....			Black bass.
Rollinsford.....	Cocheco.....			Bass (1868).
Roxbury.....	Roaring Brook.....			
Runney.....	Stinson's.....	450	Sandy.....	Bass, pick'l, perch, a few trout, suckers.
Salem.....	Captain's.....	160	Mud and rocks ..	Pick'l, perch, pouts.
".....	Polcy.....	1000	Rocky and sandy ..	Pick'ere'l, perch, bass (1877).
".....	World's End.....	140	Muddy.....	Pick'l, perch, pouts.
Salisbury.....	The Bay.....	500	Muddy.....	Pick'l, perch, pouts.
".....	Greenough's.....	10	Muddy.....	Pick'ere'l, pouts.
".....	Wilder's.....	3	Hard.....	Pick'ere'l, trout.
".....	Tucker's.....	35	Hard.....	Pick'ere'l, trout.
Sanbornton.....	Duck.....			
".....	Rollins.....	23	Muddy.....	Pick'ere'l, pouts, eels, perch, and a few trout.
".....	Cawley.....	40	Muddy.....	Pick'ere'l, pouts, eels, and a few trout.
".....	Hale's Mill.....	35	Muddy.....	Pick'ere'l, pouts, eels.
".....	Plumer's.....	60	Muddy.....	Pick'ere'l, pouts, eels, trout.
".....	Hunkin's.....	16	Various.....	Pick'l, perch, pouts.
Sandown.....	Clark's.....	50	Muddy.....	Pick'l, perch, pouts.
".....	Phillips.....	425	Sand and mud ..	Pick'ere'l, perch, pouts, black bass.
".....	Punch.....	25	Muddy.....	Pick'l, perch, pouts.
Sandwich.....	Bearcamp.....	400	Muddy.....	Pick'l, perch, pouts.
".....	Red Hill.....	300	Muddy.....	Pick'l, perch, pouts.
".....	Little.....	150	Sandy and rocky ..	Pick'l, perch, pouts.
Somersworth.....	Cole's.....			Bass (1877).
".....	Williard's.....			Smelt (1877).
Springfield.....	Pleasant.....	300	Rocky and sandy ..	Bass (1874), pick'ere'l, perch, pouts.
".....	Morgan.....	125	Sand and mud...	Same as Pleasant.
".....	Star.....	100	Rocky.....	Pick'ere'l, smelt (1877), trout, land- locked salmon.
".....	Baptist.....	100	Rocky.....	Pick'ere'l, pouts.
".....	Gilman.....	50	Muddy.....	Pouts.
".....	Mud.....	20	Muddy.....	Pouts.
Stark.....	Potter.....			
".....	Pike's.....			
".....	Piercey's.....			
".....	Long.....			
Stewartstown.....	Great Diamond.....	200	Muddy.....	Trout.
".....	Ladd.....	5	Muddy.....	Trout.
".....	Little Diamond.....	75	Muddy.....	Trout.
".....	Rock.....	10	Muddy.....	Pike.
Stoddard.....	Center.....	80	Rock and sand ..	Pick'l, perch, pouts.

LIST OF LAKES AND PONDS.—*Continued.*

TOWNS.	Ponds.	Acres.	Bottom.	Fish.
Stoddard	Mud	200	Muddy	Pick'l, perch, pouts.
"	Island	300	Rocky	Bass (1873), pickerel, perch, pouts.
"	Long	2000	Rock, sand, mud.	Bass (1873), pickerel, perch, pouts.
Strafford	Bow	1600	Rocky	Pick'el, perch, suckers, pouts, bass (1874).
"	Little Bow	50	Sand and mud	Pouts.
"	Wild Goose	40	Muddy	Pouts.
"	Trout	35	Rocky and sandy	Pouts, a few trout.
Success	Success			
Sunapee	Ledge	300	Rocky	Bass, pickerel, perch, etc.
"	Perkins	250	Muddy	Pick'el, pouts, eels, suckers.
"	Spectacle	100	Muddy	Pick'el.
Sullivan	Bolster	75	Rock and sand	Trout, pouts, pick'el, perch.
"	Chapman's	75	Various	Trout, pouts, pick'el, perch.
Sutton	Russell	10	Muddy	Pick'l, perch, pouts.
"	Billings	25	Various	Pick'el, pouts.
"	Kezar's	225	Sandy	Pick'el, perch, pouts, dace.
"	Gile	100	Muddy	Pick'l, perch, pouts.
"	Blaisdell's	150	Sandy	Pick'el, perch, black bass (1870).
Swanzy	Great	160	Various	Pick'el, perch, pouts, etc.
"	Locke's			
Tamworth	Great Hill	150	Muddy	Pick'el, pouts.
"	Chocoma	250	Sand and mud	Bass (1877), pick'el.
"	Elliott	100	Muddy	Pick'el, pouts.
"	White's	175	Sandy	Bass (1877), pick'el, pouts.
"	Whitten	300	Rocky	Trout.
"	Knowles	200	Muddy	Pick'el.
"	Pequaet	100	Rocky	
"	Church	200	Muddy	Trout.
"	Sawyer	100	Muddy	Trout.
"	Jeems	100	Muddy	Trout.
Thornton	Picket Hill	10	Muddy	Trout, pouts.
"	Cone's	5	Muddy	Pouts.
Tuftsborough	Lower Beech			
"	Dish-water			
Unity	Beaver Meadow			
"	Gilman	300	Gravelly	Pick'el, formerly trout.
"	Whortleberry			
Wakefield	Lovewell's	1200	Sandy and rocky	Pick'el, perch, California salmon, blue-backed trout.
"	Newichiwaniack			California salmon.
"	Province	1100	Rocky and sandy	Pick'el, perch, bass (1877).
"	Pine River	1000	Rock and mud	Pick'l, eels, perch.
"	Great East	3000	Rocky and sandy	Pick'el, black bass (1869).
Warner	Bagley's	22	Muddy	Pick'l, eels, perch.
"	Bear	48	Rocky	Pick'el, pouts, formerly trout.
"	Pleasant	20	Rocky and sandy	Pick'el, pouts, bass (1870), perch.

LIST OF LAKES AND PONDS.—*Continued.*

TOWNS.	Ponds.	Acres.	Bottom.	Fish.
Warner	Tom's	34	Muddy	Pick'l, perch, pouts.
"	Simmons	30	Rocky	Trout, pouts.
"	Day	12	Muddy	Pickrel, pouts.
Warren	Glen Ponds	55	Muddy	Trout.
"	Meder	30	Muddy	Pouts, suckers.
"	Weeks	10	Muddy	Trout.
Washington	Ashuelot	400	Muddy	Pick'l, perch, dace, bass, pouts.
"	Ayers	40	Muddy .....	.....
"	Bacon	50	Muddy, rocky .....	.....
"	Bear	4	Muddy	Trout.
"	Borden	80	Muddy	Perch, pouts, pickrel, trout.
"	Borney	10	Very muddy .....	.....
"	Brockway's .....	.....	.....	.....
"	Free Island	15	Very muddy	Pouts.
"	Fletcher	20	Very muddy .....	.....
"	Frog	75	Very muddy	Perch, pouts.
"	Half Moon	200	Rocky	Suckers, pickerel, pouts, perch, bass.
"	Hedgehog	50	Very muddy	Pouts, suckers.
"	Island	500	Rocky	Trout, pick'l, perch, pouts, bass.
"	Lang.pt.in Wshn	400	Very muddy	Pick'l, perch, pouts, bass.
"	May	420	Muddy	Pick'l, trout, perch, black bass.
"	Mellen	350	Sandy, clay, and rock	Pick'l, perch, bass.
"	Newman	20	Very muddy	Perch, pick'l.
"	North	250	Muddy	Pick'l, trout, perch, suckers.
"	Philbrick	15	Muddy	Perch, pouts.
"	Smith	75	Muddy	Suck'rs, perch, pouts
"	Trout	3	Muddy	Trout.
"	Vickery	15	Very muddy	Pickrel, pouts.
Webster	Long	320	Various	Bass (1871), pickerel, perch, eels.
"	Great	250	Various	Pouts, suckers, perch, eels.
Weare	Ferren's .....	.....	.....	.....
"	Mount William .....	.....	.....	.....
Wentworth's L	Wentworth .....	.....	.....	.....
Wentworth	Rocky	20	Sand and rock	Trout.
"	Brown's	500	Rock and mud	Bass (1875), pickerel, pouts, eels, trout.
"	Line	300	Sand and mud	Pick'l, perch, pouts, eels.
Wilmot	Moody .....	.....	.....	.....
"	White	10	Clear	Pick'l, trout, suckers, pouts.
"	Eagle	50	Sandy	Pick'l, perch, trout, chub, suck'rs, pout.
"	Piper	40	Muddy, rocky	Pick'l, trout, pouts.
Windsor	Black	70	Muddy	Pick'l, perch, pouts.
"	White	55	Sandy	Pick'l, perch, pouts.
"	Bagley	40	Muddy	Pick'l, perch, pouts.
Whitefield	Burns	250	Rock and sand	Pick'l, perch, pouts.
"	Blood's	100	Muddy .....	.....
"	Hale	100	Rock and sand	Pick'l, perch, pouts.
"	Hazen's	200	Rock and sand	Pick'l, perch, pouts.
"	Round	250	Rock and sand	bass (1876).
"	Little Cherry	100	Muddy	Pick'l, perch, pouts.

LIST OF LAKES AND PONDS.—*Continued.*

Towns.	Ponds.	Acres.	Bottom.	Fish.
Winchester.	Humphrey's	150	Various	Pick'l. perch, pouts, eels.
"	Round	8	Various	Pick'l. perch, pouts, eels.
Windham	Cabot's.	1100	Various	Pick'l. perch, pouts, lake trout, smelt (1894).
"	Policy	1200	Various	Bass (1877), pickerel, perch, pouts.
"	Hititite	125	Mud.	Pick'l. perch, pouts.
"	Mitchell's	25	Mud.	Pick'l. perch, pouts.
Woodstock	Loon	36	Various	Trout.
"	Elbow	75	Various	Pickerel, pouts, formerly trout.
"	Hubbard's	30	Muddy	Pickerel.
"	Russell	40	Mud and sand ..	Trout, pouts.
"	Gordon	10	Muddy	Trout.
"	Moran	20	Muddy	Trout.
Wolfeborough..	Smith's	5120	Rock and sand ..	Bass, pick'l, smelts, California salmon.
" ..	Rust's	720	Stony	Bass (1865), pickerel, roach.
" ..	Beach	480	Sandy	Pick'l. perch, pouts.
" ..	Crooked	320	Stony	Bass (1871).
" ..	Sargent's	240	Muddy	Pick'l. perch, pouts.
" ..	Garland's ..	120	Muddy	Pick'l. perch, pouts.
" ..	Barton's	80	Muddy	Pouts, eels.

REPORT

OF THE

STATE BOARD OF LICENSE COMMISSIONERS

OF THE

STATE OF NEW HAMPSHIRE

FOR THE YEAR ENDING

DECEMBER 31, 1904.

CONCORD, NEW HAMPSHIRE.

1905.

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STATE OF NEW HAMPSHIRE.

To His Excellency the Governor and the Honorable Council:

The State Board of License Commissioners submit their report for the year ending December 31, 1904, as follows:

The license law provides that all licenses granted prior to May 1, shall expire on that date, and that the commissioners shall make an annual report on or before the second Monday in each calendar year, consequently this report covers four months of the preceding license year and eight months of the present license year.

Ten applications for licenses were awaiting action at the time of the last report, January 1, 1904, and thirty-six applications were received between January 1 and May 1. Thirty-four of these were approved and licenses granted and twelve were rejected or withdrawn. One thousand and ninety-two applications have been received since May 1. One thousand and eighteen of these were approved and licenses granted. Sixty-seven were rejected or withdrawn, and seven are awaiting action. Forty-three licenses of the first class, thirty-two of the fifth class and two of the sixth class have been issued to be exercised in towns voting against license, in accordance with the provisions of section 31 of the license law. The commissioners have endeavored to exercise carefully the discretion given them in this section, and this year the number of licenses in these towns has been somewhat reduced. Fifty-seven transfers of licenses to other persons and eighteen to other premises have been made. Ten licenses have been surrendered by administrators of the estates of deceased licensees.

Thirty formal complaints for violations of licenses have been received. Twenty-eight of these have been made by special agents and two by City Marshal M. J. Healy, of Manchester. Hearings have been held on twenty-seven of these and in three

cases hearings are pending. Twenty-one licenses have been revoked and six complaints dismissed. At the time of their last report the commissioners had received two complaints on which hearings had been held and decisions were pending, and one complaint on which a hearing had not been held. In two of these cases the complaints were dismissed, and in one case the license was revoked.

The commissioners have revoked no license without a notice and hearing, although licenses of the first class may be revoked without notice. In each case where a license has been revoked, they have requested the licensee to pay the amount of the bond. If it has not been paid within a reasonable time, they have requested the sureties to pay the same. They then have notified the county solicitor of the revocation and forwarded to him a statement of their proceedings, including a copy of the testimony given at the hearing. If the amount of the bond is not paid, it devolves upon the county solicitor to bring suit to recover the same. It also devolves upon him to bring a criminal action against the licensee. Several suits upon bonds have been continued, awaiting the decision of the Supreme Court in *State v. Corron & a.* This is an action of debt on a bond. The defendant Corron applied to the commissioners for a license. The license was granted upon the giving of the bond in suit, executed by Corron as principal and The United States Fidelity and Guaranty Company as surety. Before the expiration of the license, complaint was made to the commissioners that Corron had violated the same. Upon notice to him and hearing, the commissioners found him guilty of the offense charged, revoked and cancelled his license and notified the county solicitor of their proceedings. Thereupon this action was brought. It was tried at the November term of the Superior Court for Sullivan County and there was a verdict for the plaintiff. The defendants excepted to the admission of evidence of the action of the commissioners finding Corron guilty; to the denial of defendants' motion for a nonsuit; and to the exclusion of evidence, outside the commissioners' finding, upon the question of his guilt. The case was transferred to the Supreme Court.

There has been an understanding on the part of many that the enforcement of the law, in places where licenses have not been granted, devolves upon the commissioners, but such is not the case. Neither the commissioners nor special agents have any more authority to proceed against unlicensed liquor dealers than any citizen. They have no authority to search the premises or seize the liquors of such dealers. Whenever the commissioners have had reason to suppose that the law was being violated by persons having no license, they have notified the local or county officials.

Five special agents have been continuously employed. They have made weekly reports of the places visited and the work performed in detail. They have visited all licensed places several times, taken many samples of liquor for analysis, filed complaints for violations of licenses and conducted the cases for the state in hearings before the commissioners. They have also examined locations where licenses were desired and rendered valuable service in instructing licensees. The commissioners appreciate the support given them by the local authorities in many places and the efforts they have made to enforce the law.

At the biennial election in November the towns of the state voted for the second time on the question of license. Forty-seven towns voted in favor of license and one hundred and seventy-seven towns voted against license for the two years beginning May 1, 1905. Twenty-four towns changed from license to no license, as follows: Ashland, Canaan, Claremont, Deerfield, Derry, Dummer, Enfield, Hampton, Harrisville, Lebanon, Lincoln, Milford, Newport, North Hampton, Pittsfield, Plymouth, Sunapee, Swanzey, Tilton, Wakefield, Whitefield, Wilton, Winchester and Woodstock. The following fourteen towns changed from no license to license: Barnstead, Bradford, Candia, Errol, Gilmanton, Gilsum, Langdon, Marlow, Milton, New Ipswich, Randolph, Sharon, Stoddard and Stratford. The eleven cities of the state voted in 1903 in favor of license. They do not vote again upon the question until 1906. The following towns voted this year in favor of license: Allenstown, Alstead, Alton,

Andover, Auburn, Barnstead, Bradford, Candia, Carroll, Charlestown, Chesterfield, Cornish, Croydon, Deering, Epping, Errol, Farmington, Gilmanton, Gilsum, Gorham, Greenville, Haverhill, Hillsborough, Hinsdale, Hooksett, Kingston, Langdon, Marlow, Merrimack, Milan, Milton, New Boston, Newfields, New Ipswich, Newmarket, Northumberland, Nottingham, Pembroke, Randolph, Rollinsford, Sandown, Sharon, Stewartstown, Stoddard, Stratford, Walpole and Wolfeborough.

The license law has been in operation less than eighteen months, but it has demonstrated the wisdom of those by whom it was enacted and has proved to be a good working law. With a few amendments, the need of which experience has shown, the commissioners believe it will be even more satisfactory. Most of their suggestions in regard to amendments relate to matters of minor importance and only tend to make the present law plainer. Others are more important and, if adopted, will materially strengthen the law and aid in its enforcement, without radically changing its character.

In accordance with section 2, chapter 95, Session Laws 1903, which provides that the commissioners shall make such suggestions as to amendments as they deem appropriate, they suggest the following amendments:

Amend section 5 by adding the words: Said special agents in the performance of their duties shall have the powers of constables in criminal cases within the limits of the state, and section 20, chapter 212 of the Public Statutes shall not apply to them when acting as constables under this section; so that said section, as amended, shall read as follows:

SECT. 5. Said board of license commissioners, with the approval of the governor and council, may appoint one or more special agents and fix their compensation. It shall be the duty of said special agents, under the direction of the board of license commissioners, to investigate all matters relating to the collection of license fees or penalties under this act, and in relation to compliance with law by persons holding licenses under the terms of this act. Said special agents may be removed by the board of license commissioners. Any commissioner or

special agent may enter any place where liquor is sold, at any time, and may examine any license certificate issued or purporting to have been issued under the terms of this act. He may investigate any other matters in connection with the sale of liquor, and shall make complaints for violations of this act. Said special agents in the performance of their duties shall have the powers of constables in criminal cases within the limits of the state, and section 20, chapter 212 of the Public Statutes shall not apply to them when acting as constables under this section.

Amend sub-division 7, section 6, by inserting before the word "associations," in the second line thereof, the words, duly incorporated; so that said sub-division, as amended, shall read as follows:

Seventh class.—To sell liquor of any kind to be drunk on the premises, to be issued only to duly incorporated associations, as provided in sub-division 7 of section 8, in the discretion of the board of license commissioners.

Amend sub-division 6, section 8, by striking out the words "a resident of this state and a citizen of the United States," at the end of said sub-division, and by inserting instead thereof the words, a citizen of the United States and a resident of the State of New Hampshire, and shall have been a resident of the town or city or an adjoining town or city within which they desire to carry on the liquor business, for one year last prior to the filing of their application; so that said sub-division, as amended, shall read as follows:

6. No co-partnership, unless one or more of the members of such co-partnership, owning at least one-half interest in the business thereof, shall be a citizen of the United States and a resident of the State of New Hampshire, and shall have been a resident of the town or city, or an adjoining town or city within which they desire to carry on the liquor business, for one year last prior to the filing of their application.

Amend section 10 by inserting after the word, "salaries," in the fifteenth line thereof, the words, the cost of printing their annual report; so that said section, as amended, shall read as follows:

SECT. 10. The clerk of the state board of license commissioners shall be also the treasurer of the board, and as such treasurer he shall file with the secretary of state a bond of an indemnity company licensed to do business in this state in the sum of fifty thousand dollars, the cost of which shall be chargeable to the expense of maintaining the office of the board, and conditioned for the faithful accounting of fees collected and forfeitures incurred under the provisions of this act. All such fees and forfeitures shall be paid to the treasurer of said board, who shall, annually, in the month of July, pay one half of the sum so received to the treasurer of the said city or town where the license was granted, and one half to the treasurer of the county in which said city or town is located, first, however, deducting the entire cost of maintaining the office of said board, including all salaries, the cost of printing their annual report and all expenses attaching to the performance of their duties; also the sum of one thousand dollars, or as much thereof as may be needed to pay the necessary expenses of the state laboratory of hygiene incurred under the provisions of this act, and all expenditures shall be audited by the governor and council. All moneys derived from fees and forfeitures in places where no town organization exists shall be paid to the treasurer of the county in which such place is located. The annual report of said board shall contain a statement by the treasurer of the board of the source from which all moneys received by him were derived, the names of licensees and the classes of licenses, and the street and number in each city or town, when possible, where the licenses are exercised. The records of the state board of license commissioners and all applications for licenses shall be open at all times to the inspection of selectmen, mayors, police officers, prosecuting officers, sheriffs and overseers of the poor. The accounts of the treasurer of the board shall be audited at such times and by such persons as the governor and council may direct, and the expense of such auditing shall be chargeable to the expense of maintaining the office of the license commissioners.

Amend section 13 by adding the following words: If there

is not sufficient money in the hands of the treasurer of said board to pay the rebate due upon such surrendered license, said treasurer shall demand in writing of the town or city treasurer where said license was granted, and the treasurer of the county in which said town or city is located, their proportionate shares of the amount of said rebate, and the same shall be refunded by said town or city and county within thirty days from the receipt of said demand; so that said section, as amended, shall read as follows:

SECT. 13. If a person holding a license under the provisions of this act shall die, his heirs, executors or administrators may surrender said license to said board, *provided* that said license shall have at least one month to run, computed from the first day of the month following such surrender; and said license commissioners shall thereupon compute the amount of rebate then due upon such surrendered license for the unexpired term thereof, and the treasurer of said board shall immediately pay back said sum to the person authorized to receive it and shall credit himself with the amount so paid back. If there is not sufficient money in the hands of the treasurer of said board to pay the rebate due upon such surrendered license, said treasurer shall demand in writing of the town or city treasurer where said license was granted, and the treasurer of the county in which said town or city is located, their proportionate shares of the amount of said rebate, and the same shall be refunded by said town or city and county within thirty days from the receipt of said demand.

Amend sub-division 4, section 15, by striking out all of said sub-division after the word, "given," in the first line of said sub-division, and by inserting in place thereof the words, in accordance with the provisions of section 27 of this chapter, forbidding sale or delivery to such person; so that said sub-division, as amended, shall read as follows:

Fourth, to any person where notice in writing has been given, in accordance with the provisions of section 27 of this chapter, forbidding sale or delivery to such person.

Amend section 16 by striking out the word, "fifth," in the

second line thereof; so that said section, as amended, shall read as follows:

SECT. 16. No licensee except the holder of a license of the first or seventh class shall sell, furnish, or expose for sale, or give away any liquor

First, on Sunday;

Second, on any other day except between the hours of six in the morning and ten at night; unless the town or board of mayor and aldermen of the city where such licensee carries on business shall extend the hours not later than eleven o'clock at night, which such town or board of mayor and aldermen is hereby authorized to do;

Third, on the day of any general or city election or town meeting;

Fourth, on a state or national legal holiday.

Amend sub-division 2, section 17, by adding the words, or to permit any male person under the age of twenty-one years to sell or serve any liquor on the premises, except to *bona fide* registered guests in their rooms, and in dining rooms with meals, under licenses of the first class; so that said sub-division, as amended, shall read as follows:

2. To permit any girl or woman, or knowingly permit any person known to have been convicted of a felony, to sell or serve any liquor on the premises; or to permit any male person under the age of twenty-one years to sell or serve any liquor on the premises, except to *bona fide* registered guests in their rooms and in dining rooms with meals under licenses of the first class.

Amend sub-division 4, section 17, by striking out the word, "section," in the fourteenth line of said sub-division, and by inserting instead thereof the word, sub-division; so that said sub-division, as amended, shall read as follows:

4. To have any screens or blinds, any curtains, or anything covering any part of any window, or to have in any part of any window or door any opaque or colored glass that obstructs or in any way prevents a person passing from having a full view from the sidewalk, alley, or road in front of the bar, or

room in such building where liquor is sold or kept for sale ; or to traffic in liquor in any interior room or place not having in the principal door or entrance to such room or place, a section of such door filled with clear glass so that a clear and unobstructed view of the bar and room where the liquor is sold and kept for sale can be had. And it shall be unlawful to have at any time in the room or place where liquor is sold, any enclosed box or stall, or any obstruction which prevents a full view of the entire room by every person therein. The provisions of this sub-division shall not apply to licenses under the first and fifth and seventh classes.

Amend section 17 by adding the following sub-division :
5. To grant any license of the second, third, fourth or eighth class to be exercised in connection with a grocery or other store, except that a license of the third class may be granted to be exercised in a drug store in accordance with the provision of section 22 of this chapter ; so that said section, as amended, shall read as follows :

SECT. 17. It shall not be lawful * * *

5. To grant any license of the second, third, fourth or eighth class to be exercised in connection with a grocery or other store, except that a license of the third class may be granted to be exercised in a drug store in accordance with the provision of section 22 of this chapter.

Amend section 23 by inserting the word, kind, before the word "quantity," in the third line thereof, by striking out the word "the " before the word "price," in the fourth line thereof, by inserting the words, shall be a part of said book and shall not be detached therefrom and, after the word "certificate," in the twelfth line thereof, and by adding to said section the following sub-division :

Every dealer in hardware, paints and decorating materials, to whom a license of the fifth class is granted, shall keep a book in which he shall enter at the time of every sale of alcohol, the date thereof, the name and residence of the purchaser, his residence by street and number, if there be such, the quantity and price of the alcohol sold, and the purpose for which it

is to be used. Said book shall be in form substantially as follows :

Date.	Name of purchaser.	Residence giving street and number, if there be such.	Quantity.	Price.	Purpose of use.

so that said section, as amended, shall read as follows :

SECT. 23. Every retail druggist and apothecary shall keep a book in which he shall enter at the time of every such sale, the date thereof, the name of the purchaser, the kind, quantity and price of said liquor, the purpose for which it was sold, and the residence by street and number, if such there be, of said purchaser. If such sale is made upon the prescription of a physician, the book shall also state the name of the physician, and shall state the use for which said liquor was prescribed and the quantity to be used for such purpose, and shall be cancelled in like manner as the certificate hereinbefore mentioned. Said book shall be in form substantially as follows :

Date.	Name of purchaser.	Residence.	Kind and quantity.	Purpose of use.	Price.	Name of physician.

The certificate shall be a part of said book and shall not be detached therefrom, and shall be in form substantially as follows :

CERTIFICATE.

I wish to purchase.....and I certify that I am not a minor and that the same is to be used for medicinal mechanical chemical or sacramental purposes. (Draw a line through the words which do not indicate the purpose of the purchase.)

.....Date of sale and cancellation.

.....Signature of purchaser.

Every dealer in hardware, paints and decorating materials, to whom a license of the fifth class is granted, shall keep a book in which he shall enter at the time of every sale of alcohol, the date thereof, the name and residence of the purchaser, his residence by street and number, if there be such, the quantity and price of the alcohol sold, and the purpose for which it is to be used. Said book shall be in form substantially as follows :

Date.	Name of purchaser.	Residence giving street and number, if there be such.	Quantity.	Price.	Purpose of use.

Amend section 24 by striking out the word, "book," in the first line of said section, and by inserting instead thereof the word, books; by striking out the words, "and the book provided for in the same section," in the second and third lines of said section ; by striking out the word, "and," in the sixth line of said section, and by adding the words, and prosecuting agents, at the end of said section; so that said section, as amended, shall read as follows :

SECT. 24. The books, certificates, and prescriptions provided for in the preceding section shall be at all times open to the inspection of the commissioners and special agents hereinbefore mentioned, the mayor and aldermen, selectmen, overseers of the poor, sheriffs, constables, police officers and prosecuting agents.

Amend section 27 by striking out the words, "of the city or one of the selectmen of the town in which such person lives," in the third and fourth lines of said section, and by inserting in place thereof the words, chief of police or city marshal of the city, or one of the selectmen of the town, or an overseer of the poor of the town or city, in which such person lives, or any prosecuting attorney or any county commissioner; so that said section, as amended, shall read as follows :

SECT. 27. The husband, wife, parent, guardian or employer of a person who has the habit of drinking intoxicating liquor

to excess, or the mayor, chief of police or city marshal of the city, or one of the selectmen of the town, or an overseer of the poor of the town or city, in which such person lives, or any prosecuting attorney or any county commissioner may give notice in writing, signed by him or her, to any person requesting him not to sell or deliver such liquor to the person having such habit. If the person so notified, at any time within twelve months thereafter, sells or delivers any liquor to the person having such a habit, or permits him to loiter on his premises, the person giving the notice may, in an action of tort, recover of the person notified, not less than one hundred nor more than five hundred dollars, as may be assessed as damages; but an employer who gives such notice shall not recover unless he is injured in his person or property, and a druggist or apothecary shall not be liable hereunder for a sale made upon the prescription of a physician. A married woman may bring such action in her own name, and all damages recovered by her shall inure to her separate use. A mayor or selectman may bring such an action in his own name for the benefit, at his election, of either the husband, wife, child, parent, or guardian of the person having such habit. Upon the death of either party or of the person beneficially interested in the action, the action and right of action shall survive for the benefit of his executor or administrator.

Amend section 28 by inserting after the word, "first," at the end of the third line of said section, the words, and seventh, and by striking out the word, "class," in the fourth line of said section, and by inserting instead thereof the word, classes; so that said section, as amended, shall read as follows:

SECT. 28. The state board of license commissioners are hereby authorized and empowered to prescribe regulations for the conduct of the traffic in liquor under any license of the first and seventh classes, as they may see fit, and whoever violates any such regulation, or any provision of this act or of his license, whatever its class, shall, unless otherwise expressly provided, be punished by a fine of one hundred dollars, the forfeiture of his license and the bond thereon, and by imprison-

ment for not more than sixty days. Such licensee shall be disqualified to hold a license for three years after his conviction, and if he is the owner of the licensed premises no license shall be issued to be exercised on the premises described in the license during the residue of the term thereof.

Amend section 33 by inserting after the word, "act," in the third line thereof, the words, or whoever, in such city or town, shall deliver, or cause to be delivered, liquor to any person to whom the sale or delivery is forbidden by sections 15 and 27 of this chapter; so that said section, as amended, shall read as follows:

SECT. 33. Whoever, in a city or town wherein the provisions of this act are in force, shall sell or keep for sale, liquor contrary to the provisions of this act, or whoever, in such city or town, shall deliver, or cause to be delivered, liquor to any person to whom the sale or delivery is forbidden by sections 15 and 27 of this chapter, shall be punished by a fine of two hundred dollars and by imprisonment for not less than one month nor more than two years.

Amend said chapter by adding the following section:

SECT. 35. Any commissioner may summon witnesses to appear before said board of license commissioners to testify at hearings before them. If a witness so summoned fails to appear or to give testimony in accordance with the summons, any justice of the superior court, in term time or vacation, upon application of said board, shall compel the witness to attend before said board and testify, as if he had been duly summoned to testify before said court in an action there pending. The fees of witnesses so summoned shall be the same as of witnesses before the superior court and shall be paid by the treasurer of said board.

In the opinion of the commissioners, said chapter should be further amended so as to provide for a victualler's license.

They also suggest that section 1, chapter 122, Session Laws 1903, be amended, so that the punishment for the illegal sale of liquor in no license towns shall be the same as the punishment for the same offense in license towns.

The report of the treasurer for the period ending December 31 is annexed hereto and made a part of this report. It contains a statement of all moneys received from fees, forfeitures and interest, together with disbursements; also various tables giving information required by the law.

Respectfully submitted,

CYRUS H. LITTLE,
HENRY W. KEYES,
JOHN KIVEL,

State Board of License Commissioners.

Concord, January 7, 1905.

TREASURER'S REPORT.

FINANCIAL STATEMENT

For the year ending April 30, 1904.

RECEIPTS.

Fees from licenses granted	\$340,505.29
Fees from licenses transferred	700.00
Forfeitures	3,000.00
Interest on deposits	1,546.92
	<hr/>
	\$345,752.21

DISBURSEMENTS.

Rebates on licenses surrendered . . \$1,846.80	
State Laboratory of Hygiene . . . 684.95	
Expenses* 25,317.82	
Paid to cities, towns and counties† 317,911.81	
	<hr/>
	\$345,761.38
Over payment† 9.17	
	<hr/>
	\$345,752.21

FINANCIAL STATEMENT

From January 1, 1904, to April 30, 1904, inclusive.

(Included in statement for the year ending April 30, 1904.)

RECEIPTS.

Balance on hand January 1, 1904	\$49,527.31
Fees from licenses granted	2,653.11
Fees from licenses transferred	230.00
Forfeitures	500.00
	<hr/>
	\$52,910.42

* From April 1, 1903, to April 30, 1904, inclusive.

† Over payment of \$9.17, occasioned by payment of rebates on licenses surrendered after the distribution of receipts July 31, 1903.

DISBURSEMENTS.

Rebates on licenses surrendered	. \$646.04	
State Laboratory of Hygiene	. 238.30	
Expenses	. 9,033.28	
Paid to cities, towns and counties*	. 43,001.97	
	<u>\$52,919.59</u>	
Over payment*	. 9.17	
	<u></u>	\$52,910.42

FINANCIAL STATEMENT

From May 1, 1904, to December 31, 1904, inclusive.

RECEIPTS.

Fees from licenses granted	. . . . .	\$386,679.98
Fees from licenses transferred	. . . . .	520.00
Forfeitures	. . . . .	522.50
Interest on deposits	. . . . .	2,310.43
		<u>\$390,032.91</u>

DISBURSEMENTS.

Rebates on licenses surrendered	. \$2,292.41	
State Laboratory of Hygiene	. 362.00	
Expenses	. 15,250.56	
Paid to cities, towns and counties	341,403.24	
Over payment for year ending April 30, 1904†	. 9.17	
	<u>\$359,317.38</u>	
Balance on hand	. 30,715.53	
	<u></u>	\$390,032.91

*Over payment of \$9.17, occasioned by payment of rebates on licenses surrendered after the distribution of receipts July 31, 1903.

†Over payment to certain towns and counties for the year ending April 30, 1904. See financial and detailed statements for that year.

CLASSIFIED STATEMENT OF EXPENSES

From April 1, 1903, to April 30, 1904, inclusive.

SHOWING DISPOSITION OF INTEREST RECEIVED ON DEPOSITS.

Salaries of commissioners	\$8,016.66
Expenses of commissioners	1,446.00
Clerical expenses	3,828.01
Salaries of special agents	4,430.00
Expenses of special agents	2,084.52
Furniture and fixtures	1,368.47
Printing and stationery*	1,225.75
Rent	689.00
Postage	281.90
Lights	70.56
Express and freight	23.58
Telephone and telegraph	299.90
Costs (complaints and hearings)	572.20
Incidentals	981.27
	<hr/>
	\$25,317.82
Paid State Laboratory of Hygiene	684.95
	<hr/>
Total	\$26,002.77
Deduct interest received on deposits	1,546.92
	<hr/>
Balance apportioned to cities and towns	\$24,455.85

*Includes cost of printing annual report, 1,500 copies.

CLASSIFIED STATEMENT OF EXPENSES

From May 1, 1904, to December 31, 1904, inclusive.

Salaries of commissioners	\$4,933.34
Expenses of commissioners	370.50
Clerical expenses	2,500.00
Salaries of special agents	4,000.00
Expenses of special agents	1,731.57
Rent	472.00
Lights	33.23
Postage	195.50
Printing and stationery	313.39
Telephone and telegraph	163.47
Costs (complaints and hearings)	268.31
Incidentals	269.25
	<hr/>
	\$15,250.56

STATISTICAL TABLES.

BELKNAP COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county for the year ending April 30, 1904.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Alton	\$469.85	.....	.....	\$469.85	.....	\$469.85
Belmont	8.91	.....	.....	8.91	.....	8.91
Gilford	23.45	.....	.....	23.45	.....	23.45
Laconia	6,928.45	\$10.00	.....	6,938.45	.....	6,938.45
Lake Winnepesaukee*..	20.16	.....	.....	20.16	.....	20.16
Meredith	19.01	.....	.....	19.01	.....	19.01
Tilton	526.10	10 00	.....	536.10	.....	536.10
Total.....	\$7,995.93	\$20.00	.....	\$8,015.93	.....	\$8,015.93

*One sixth-class license exercised upon the waters of Lake Winnepesaukee in the counties of Belknap and Carroll, and not in any town in said counties. (See also Carroll County.)

CARROLL COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county for the year ending April 30, 1904.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Bartlett.....	\$65.39	.....	.....	\$65.39	.....	\$65.39
Conway.....	172.36	.....	.....	172.36	.....	172.36
Jackson.....	38.58	.....	.....	38.58	.....	38.58
Lake Winnepesaukee*..	20.16	.....	.....	20.16	.....	20.16
Ossipee.....	20.43	.....	.....	20.43	.....	20.43
Wakefield.....	857.43	.....	.....	857.43	\$35.28	822.15
Wolfeborough.....	875.16	.....	.....	875.16	.....	875.16
Total.....	\$2,049.51	.....	.....	\$2,049.51	\$35.28	\$2,014.23

*See foot note, Belknap County.

CHESHIRE COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Alstead.....	\$161.02			\$161.02		\$161.02
Chesterfield.....	599.70	\$10.00		609.70		609.70
Dublin.....	20.36	10.00		30.36		30.36
Harrisville.....	517.82			517.82		517.82
Hinsdale.....	1,618.52			1,618.52		1,618.52
Keene.....	10,450.13			10,450.13		10,450.13
Swanzy.....	336.09	10.00		346.09		346.09
Troy.....	35.08			35.08		35.08
Walpole.....	2,448.19	30.00		2,448.19		2,448.19
Winchester.....	1,161.75			1,161.75		1,161.75
Total.....	\$17,318.66	\$60.00		\$17,378.66		\$17,378.66

COOS COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipt less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Berlin.....	\$19,920.20	\$50.00	.....	\$19,970.20	.....	\$19,970.20
Carrol.....	844.49	10.00	.....	854.49	.....	854.49
Colebrook.....	61.53	.....	.....	61.53	.....	61.53
Errol.....	29.03	.....	.....	29.03	.....	29.03
Gorham.....	889.72	.....	.....	889.72	.....	889.72
Jefferson.....	125.42	.....	.....	125.42	.....	125.42
Lancaster.....	61.20	.....	.....	61.20	\$4.08	57.12
Milan.....	556.28	.....	.....	556.28	.....	556.28
Northumberland.....	1,237.73	.....	.....	1,237.73	.....	1,237.73
Sargent's Purchase.....	21.11	.....	.....	21.11	.....	21.11
Stewartstown.....	522.20	10.00	.....	532.20	.....	532.20
Stratford.....	32.84	.....	.....	32.84	.....	32.84
Whitefield.....	834.75	.....	.....	834.75	.....	834.75
Total.....	\$25,136.50	\$70.00	.....	\$25,206.50	\$4.08	\$25,202.4

GRAFTON COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Ashland.....	\$469.83			\$469.83		\$469.83
Benton.....	20.36			20.36		20.36
Bethlehem.....	71.40			71.40		71.40
Bristol.....	47.23			47.23		47.23
Campton.....	4.47			4.47		4.47
Canaan.....	253.69			253.69		253.69
Enfield.....	1,466.44			1,466.44		1,466.44
Franconia.....	85.55			85.55		85.55
Grafton.....	19.56			19.56		19.56
Haverhill.....	1,133.26			1,133.26		1,133.26
Lebanon.....	4,199.68	\$20.00		4,219.68		4,219.68
Lincoln.....	936.56			936.56		936.56
Lisbon.....	91.95			91.95		91.95
Littleton.....	27.29			27.29		27.29
Plymouth.....	737.61			737.61		737.61
Warren.....	32.69			32.69		32.69
Woodstock.....	266.79			266.79		266.79
Total.....	\$9,864.36	\$20.00		\$9,884.36		\$9,884.36

HILLSBOROUGH COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Antrim.....	\$7.63	.....	.....	\$7.63	.....	\$7.63
Goffstown.....	46.65	.....	.....	46.65	.....	46.65
Greenville.....	1,197.64	.....	.....	1,197.64	.....	1,197.64
Hancock.....	25.13	.....	.....	25.13	.....	25.13
Hillsborough.....	301.18	.....	\$500.00	801.18	.....	801.18
Manchester.....	99,605.10	\$180.00	2,000.00	101,785.10	\$956.36	100,828.74
Merrimack.....	491.68	.....	.....	491.68	.....	491.68
Milford.....	2,440.96	.....	.....	2,440.96	.....	2,440.96
Nashua.....	43,835.50	70.00	.....	43,905.50	.....	43,905.50
New Boston.....	154.69	.....	.....	154.69	.....	154.69
New Ipswich.....	19.83	.....	.....	19.83	.....	19.83
Peterborough.....	38.38	.....	.....	38.38	.....	38.38
Temple.....	18.95	.....	.....	18.95	.....	18.95
Wilton.....	1,903.86	30.00	.....	1,933.86	.....	1,933.86
Total.....	\$150,087.18	\$280.00	\$2,500.00	\$152,867.18	\$956.36	\$151,910.82

MERRIMACK COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county for the year ending April 30, 1904.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts. less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Allenstown	\$1,014.78	.....	.....	\$1,014.78	.....	\$1,014.78
Andover	531.58	.....	.....	531.58	.....	531.58
Concord	18,716.32	\$30.00	.....	18,746.32	.....	18,746.32
Franklin	5,860.58	20.00	.....	5,880.58	.....	5,880.58
Henniker	49.98	.....	.....	49.98	.....	49.98
Hooksett	897.19	10.00	.....	907.19	.....	907.19
Hopkinton	27.53	.....	.....	27.53	.....	27.53
Newbury	29.08	.....	.....	29.08	.....	29.08
New London	8.09	.....	\$500.00	508.09	.....	508.09
Pembroke	2,293.97	10.00	.....	2,303.97	.....	2,303.97
Pittsfield	1,466.99	.....	.....	1,466.99	.....	1,466.99
Warner.....	8.36	.....	.....	8.36	.....	8.36
Total	\$30,904.45	\$70.00	\$500.00	\$31,474.45	.....	\$31,474.45

ROCKINGHAM COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county for the year ending April 30, 1904.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Candia.....	\$27.94	.....	.....	\$27.94	.....	\$27.94
Chester.....	41.53	.....	.....	41.53	.....	41.53
Deerfield.....	164.52	.....	.....	164.52	.....	164.52
Derry.....	2,322.88	.....	.....	2,322.88	.....	2,322.88
East Kingston.....	32.04	.....	.....	32.04	.....	32.04
Epping.....	2,194.52	.....	.....	2,194.52	.....	2,194.52
Exeter.....	142.09	.....	.....	142.09	.....	142.09
Hampton.....	1,415.14	.....	.....	1,415.14	.....	1,415.14
Kingston.....	233.61	.....	.....	233.61	.....	233.61
Newcastle.....	43.20	.....	.....	43.20	.....	43.20
Newfields.....	922.48	.....	.....	922.48	.....	922.48
Newmarket.....	2,069.28	.....	.....	2,069.28	.....	2,069.28
Northwood.....	16.59	.....	.....	16.59	.....	16.59
Nottingham.....	315.19	.....	.....	315.19	.....	315.19
Portsmouth.....	34,153.35	\$40.00	.....	34,193.35	\$564.41	33,628.94
Raymond.....	48.56	.....	.....	48.56	.....	48.56
Rye.....	84.88	.....	.....	84.88	.....	84.88
Sandown.....	80.38	.....	.....	80.38	.....	80.38
Total.....	\$44,308.18	\$40.00	.....	\$44,348.18	\$564.41	\$43,783.77

STRAFFORD COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county for the year ending April 30, 1904.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Dover.....	\$25,427.25	\$30.00	.....	\$25,457.25	\$286.67	\$25,170.58
Farmington.....	1,633.66	.....	.....	1,633.66	.....	1,633.66
Milton.....	126.51	10.00	.....	136.51	.....	136.51
Rochester.....	8,890.35	70.00	.....	8,960.35	.....	8,960.35
Rollinsford.....	2,599.67	.....	.....	2,599.67	.....	2,599.67
Somersworth.....	8,403.31	30.00	.....	8,433.31	.....	8,433.31
Total.....	\$47,080.75	\$140.00	.....	\$47,220.75	\$286.67	\$46,934.08

SULLIVAN COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county for the year ending April 30, 1904.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Charlestown.....	\$685.08	.....	.....	\$685.08	.....	\$685.08
Claremont.....	3,185.94	.....	.....	3,185.94	.....	3,185.94
Cornish.....	322.05	.....	.....	322.05	.....	322.05
Croydon.....	26.21	.....	.....	26.21	.....	26.21
Newport.....	1,374.37	.....	.....	1,374.37	.....	1,374.37
Sunapee.....	166.12	.....	.....	166.12	.....	166.12
Total.....	\$5,759.77	.....	.....	\$5,759.77	.....	\$5,759.77

RECAPITULATION

For the year ending April 30, 1904.

Counties.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Belknap.....	\$7,995.93	\$20.00	.....	\$8,015.93	.....	\$8,015.93
Carroll.....	2,049.51	.....	.....	2,049.51	\$35.28	2,014.23
Cheshire.....	17,318.66	60.00	.....	17,378.66	.....	17,378.66
Coös.....	25,136.50	70.00	.....	25,206.50	4.08	25,202.42
Grafton.....	9,864.36	20.00	.....	9,884.36	.....	9,884.36
Hillsborough.....	150,087.18	280.00	\$2,500.00	152,867.18	956.36	151,910.82
Merrimack.....	30,904.45	70.00	500.00	31,474.45	.....	31,474.45
Rockingham.....	44,308.18	40.00	.....	44,348.18	564.41	43,783.77
Strafford.....	47,080.75	140.00	.....	47,220.75	286.67	46,934.08
Sullivan.....	5,759.77	.....	.....	5,759.77	.....	5,759.77
Total.....	\$340,505.29	\$700.00	\$3,000.00	\$344,205.29	\$1,846.80	\$342,358.49

BELKNAP COUNTY.

Statement

Showing the receipts, less rebates paid on licenses surrendered, the pro rata expense of maintaining office, the amount distributable, and the amount paid each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Receipts less rebates.	Pro rata expense of maintaining office.	Amount distributable.	Amount paid city or town for the year ending April 30, 1904.			Amount paid county of Belknap for the year ending April 30, 1904.		
				Paid July 31, 1903.	Paid July 30, 1904.	Total.	Paid July 31, 1903.	Paid July 30, 1904.	Total.
Alton.....	\$469.85	\$33.56	\$436.29	\$211.43	\$6.72	\$218.15	\$211.43	\$6.71	\$218.14
Belmont.....	8.91	.64	8.27	4.01	.12	4.13	4.01	.13	4.14
Gilford.....	23.45	1.68	21.77	.....	10.89	10.89	.....	10.88	10.88
Laconia.....	6,938.45	495.64	6,442.81	2,647.47	573.33	3,221.40	2,647.47	573.94	3,221.41
Lake Winnepesaukee.....	20.16	1.44	18.72	.....	.....	*	18.14	.58	18.72
Mereditth.....	19.01	1.36	17.65	7.13	1.70	8.83	7.14	1.68	8.82
Tilton.....	536.10	38.29	497.81	142.51	106.39	248.90	142.51	106.40	248.91
Total.....	\$8,015.93	\$572.61	\$7,443.32	\$3,012.55	\$699.75	\$3,712.30	\$3,030.70	\$700.32	\$3,731.02

*One sixth-class license exercised upon the waters of Lake Winnepesaukee in the counties of Belknap and Carroll and not in any town in said counties. Fee divided equally between said counties. (See also Carroll County.)

CARROLL COUNTY.

Statement

Showing the receipts, less rebates paid on licenses surrendered, the pro rata expense of maintaining office, the amount distributable, and the amount paid each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Receipts less rebates.	Pro rata expense of maintaining office.	Amount distributable.	Amount paid city or town for the year ending April 30, 1904.		Amount paid county of Carroll for the year ending April 30, 1904.	
				Paid July 31, 1903.	Paid July 30, 1904.	Paid July 31, 1903.	Paid July 30, 1904.
Bartlett.....	\$65.39	\$4.67	\$60.72	\$21.17	\$9.19	\$21.17	\$9.19
Conway.....	172.36	12.32	160.04	74.31	5.71	74.32	5.70
Jackson.....	38.58	2.76	35.82	17.36	.55	17.36	.55
Lake Winnepesaukee.....	20.16	1.44	18.72	.....	.....	18.14	.58
Ossipee.....	20.43	1.46	18.97	.....	.30	9.20	.28
Wakefield.....	822.15	58.73	763.42	385.85	.....	385.84	.....
Wolfeborough.....	875.16	62.52	812.64	392.41	13.91	392.40	13.92
Total.....	\$2,014.23	\$143.90	\$1,870.33	\$800.29	\$29.66	\$918.43	\$80.22
							†\$948.65

* See foot-note, Belknap County.

† Overpayment of \$4.14 to the town of Wakefield, and \$4.13 to the county of Carroll, occasioned by payment of rebate on a license surrendered after the distribution of receipts, July 31, 1903.

CHESHIRE COUNTY.

Statement

Showing the receipts, less rebates paid on licenses surrendered, the pro rata expense of maintaining office, the amount distributable, and the amount paid each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Receipts less rebates.	Pro rata expense of main- taining office.	Amount distribu- table.	Amount paid city or town for the year ending April 30, 1904.		Amount paid county of Cheshire for the year ending April 30, 1904.	
				Paid July 31, 1903.	Paid July 30, 1904.	Paid July 31, 1903.	Paid July 30, 1904.
Alstead...	\$161.02	\$11.51	\$149.51	\$72.46	\$2.30	\$74.76	\$2.29
Chesterfield.....	609.70	43.55	566.15	142.57	140.50	283.07	140.52
Dublin.....	30.36	2.17	28.19	9.16	4.94	14.10	4.93
Harrisville.....	517.82	36.99	480.83	85.65	154.76	240.41	154.77
Hinsdale.....	1,618.52	115.61	1,502.91	412.21	309.25	751.46	309.23
Keene.....	10,410.13	746.47	9,703.66	4,653.03	198.80	4,851.83	198.81
Swansey.....	346.09	24.73	321.36	151.24	9.44	160.68	9.44
Troy.....	35.08	2.51	32.57	.....	16.28	16.28	16.29
Walpole.....	2,448.19	174.88	2,273.31	932.14	204.52	1,136.66	204.51
Winchester.....	1,161.75	82.99	1,078.76	441.74	97.64	539.38	97.64
Total.....	\$17,378.66	\$1,241.41	\$16,137.25	\$6,930.20	\$1,138.43	\$8,068.63	\$1,138.43
							\$8,068.62

COOS COUNTY.

Statement

Showing the receipts, less rebates paid on licenses surrendered, the pro rata expense of maintaining office, the amount distributable, and the amount paid each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Receipts less rebates.	Pro rata expense of maintaining office.	Amount distributable.	Amount paid city or town for the year ending April 30, 1904.			Amount paid county of Coös for the year ending April 30, 1904.		
				Paid July 31, 1903.	Paid July 30, 1904.	Total.	Paid July 31, 1903.	Paid July 30, 1904.	Total.
Berlin.....	\$19,970.20	\$1,426.54	\$18,543.66	\$8,457.09	\$514.74	\$9,271.83	\$8,457.08	\$514.75	\$9,271.83
Carroll....	834.49	61.04	793.45	373.80	22.93	396.73	373.79	22.93	396.72
Colebrook....	61.53	4.40	57.13	21.10	7.46	28.56	21.09	7.48	28.57
Errol.....	29.03	2.08	26.95	.....	13.48	13.48	.....	13.47	13.47
Gorham.....	889.72	63.55	826.17	350.41	62.67	413.08	350.42	62.67	413.09
Jefferson....	125.42	8.96	116.46	56.44	1.79	58.23	56.44	1.79	58.23
Lancaster....	57.12	4.07	53.05	26.98	.....	26.98	26.97	.....	26.97
Milan.....	556.28	39.74	516.54	222.20	35.07	258.27	222.20	35.07	258.27
Northumberland....	1,237.73	88.41	1,149.32	486.21	88.45	574.66	486.21	88.45	574.66
Sargent's Purchase....	21.11	1.51	19.60	.....	.....	.....	19.00	.60	19.60
Stewartstown....	532.20	38.02	494.18	153.42	93.67	247.09	153.42	93.67	247.09
Stratford....	32.84	2.35	30.49	13.36	1.88	15.24	13.35	1.90	15.25
Whitefield....	834.75	59.63	775.12	341.52	46.04	387.56	341.53	46.03	387.56
Total.....	\$25,202.42	\$1,800.30	\$23,402.12	\$10,502.53	\$1,189.18	\$11,691.71	\$10,521.50	\$1,189.31	\$11,711.31

* Overpayment of \$0.45 to the town of Lancaster, and \$0.45 to the county of Coös, occasioned by payment of rebate on a license surrendered after the distribution of receipts, July 31, 1903.

† No town organization. Fee paid to county of Coös.

GRAFTON COUNTY.

Statement

Showing the receipts, less rebates paid on licenses surrendered, the pro rata expense of maintaining office, the amount distributable, and the amount paid each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Receipts less rebates.	Pro rata expense of maintaining office.	Amount distributable.	Amount paid city or town for the year ending April 30, 1904.			Amount paid County of Grafton for the year ending April 30, 1904.		
				Paid July 31, 1903.	Paid July 30, 1904.	Total.	Paid July 31, 1903.	Paid July 30, 1904.	Total.
Ashland.....	\$469.83	\$33.57	\$436.26	\$211.43	\$6.70	\$218.13	\$211.42	\$6.71	\$218.13
Benton.....	20.36	1.45	18.91	9.16	.29	9.45	9.16	.30	9.46
Bethlehem.....	71.40	5.10	66.30	32.13	1.02	33.15	32.13	1.02	33.15
Bristol.....	47.23	3.37	43.86	21.26	.67	21.93	21.25	.68	21.93
Campton.....	4.47	.32	4.15	.....	.....	2.08	.....	.....	2.07
Canaan.....	253.69	18.12	235.57	114.16	3.62	117.78	114.16	3.63	117.79
Enfield.....	1,466.41	104.76	1,361.65	49.45	631.39	680.84	49.46	631.38	680.84
Franconia.....	85.55	6.11	79.44	38.50	1.22	39.72	38.49	1.23	39.72
Grafton.....	19.56	1.40	18.16	8.80	.28	9.08	8.80	.28	9.08
Haverhill.....	1,133.26	80.95	1,052.31	509.97	16.19	526.16	509.96	16.19	526.15
Lebanon.....	4,219.68	301.43	3,918.25	*931.67	1,027.45	1,959.12	*931.67	1,027.46	1,959.13
Lincoln.....	936.56	66.90	869.66	219.19	215.64	434.83	219.20	215.63	434.83
Lisbon.....	91.95	6.57	85.38	22.71	19.98	42.69	22.70	19.99	42.69
Littleton.....	27.29	1.95	25.34	12.28	.39	12.67	12.28	.39	12.67
Plymouth.....	737.61	52.69	684.92	331.92	10.54	342.46	331.93	10.53	342.46
Warren.....	32.69	2.34	30.35	14.71	.47	15.18	14.71	.46	15.17
Woodstock.....	266.79	19.05	247.74	87.63	36.24	123.87	87.64	36.23	123.87
Total.....	\$9,884.36	\$706.08	\$9,178.28	\$2,614.97	\$1,974.17	\$4,589.14	\$2,614.96	\$1,974.18	\$4,589.14

* Paid April 30, 1904.

HILLSBOROUGH COUNTY

Statement

Showing the receipts, less rebates paid on licenses surrendered, the pro rata expense of maintaining office, the amount distributable, and the amount paid each city, town and county for the year ending April 30, 1904.

Cities and Towns.	Receipts less rebates.	Pro rata expense of maintaining office.	Amount distributable.	Amount paid city or town for the year ending April 30, 1904.			Amount paid county of Hillsborough for the year ending April 30, 1904.		
				Paid July 31, 1903.	Paid July 30, 1904.	Total.	Paid July 31, 1903.	Paid July 30, 1904.	Total.
Antrim.....	\$7.63	\$0.54	\$7.09	\$3.43	\$0.12	\$3.55	\$3.44	\$0.10	\$3.54
Goffstown.....	46.65	3.33	43.32	7.43	14.23	21.66	7.43	14.23	21.66
Greenville.....	1,197.64	85.54	1,112.10	313.54	242.51	556.05	313.54	242.51	556.05
Hancock.....	25.13	1.80	23.33	.....	11.66	11.66	.....	11.67	11.67
Hillsborough.....	801.18	57.23	743.95	114.59	257.39	371.98	114.59	257.38	371.97
Manchester.....	100,898.74	7,202.55	93,696.19	40,978.09	5,835.00	46,813.09	40,978.09	5,835.01	46,813.10
Merrimack.....	491.68	35.12	456.56	187.87	40.41	228.28	187.86	40.42	228.28
Milford.....	2,440.96	174.36	2,266.60	1,098.43	34.87	1,133.30	1,098.43	34.87	1,133.30
Nashua.....	43,905.50	3,136.32	40,769.18	18,176.83	2,207.76	20,384.59	18,176.83	2,207.76	20,384.59
New Boston.....	154.69	11.05	143.64	69.61	2.21	71.82	69.61	2.21	71.82
New Ipswich.....	39.83	1.42	38.41	8.92	.29	9.21	8.93	.27	9.20
Peterborough.....	38.38	2.74	35.64	17.27	.56	17.82	17.27	.55	17.82
Temple.....	18.93	1.36	17.59	8.53	.26	8.79	8.52	.28	8.80
Wilton.....	1,933.86	136.15	1,795.71	737.24	160.62	897.86	737.24	160.61	897.85
Total.....	\$151,910.82	\$10,851.51	\$141,059.31	\$61,721.78	\$8,807.88	\$70,529.66	\$61,721.78	\$8,807.87	\$70,529.65

MERRIMACK COUNTY.

Statement

Showing the receipts, less rebates paid on licenses surrendered, the pro rata expense of maintaining office, the amount distributable, and the amount paid each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Receipts less rebates.	Pro rata expense of maintaining office.	Amount distributable.	Amount paid city or town for the year ending April 30, 1904.			Amount paid county of Merrimack for the year ending April 30, 1904.		
				Paid July 31, 1903.	Paid July 30, 1904.	Total.	Paid July 31, 1903.	Paid July 30, 1904.	Total.
Allenstown.....	\$1,014.78	\$72.49	\$942.29	\$456.65	\$14.50	\$471.15	\$456.65	\$14.49	\$471.14
Andover.....	531.58	37.97	493.61	55.34	191.46	246.80	55.34	191.47	246.81
Concord.....	18,746.32	1,339.11	17,407.21	7,655.79	1,047.82	8,703.61	7,655.79	1,047.81	8,703.60
Franklin.....	5,880.58	420.07	5,460.51	2,220.02	510.23	2,730.25	2,220.02	510.24	2,730.26
Henniker.....	49.98	3.37	46.61	22.49	.72	23.21	22.49	.71	23.20
Hosket.....	907.19	64.80	842.39	96.35	324.64	421.19	96.36	324.84	421.20
Hooksett.....	27.53	1.97	25.56	12.39	.39	12.78	12.39	.39	12.78
Newbury.....	29.08	2.08	27.00	13.09	.41	13.50	13.08	.42	13.50
New London...	508.09	36.30	471.79	3.64	232.26	235.90	3.64	232.25	235.89
Pembroke.....	2,303.97	164.58	2,139.39	961.52	108.18	1,069.70	961.52	108.17	1,069.69
Pittsfield.....	1,466.99	104.79	1,362.20	627.00	54.10	681.10	627.00	54.10	681.10
Warner.....	8.36	.60	7.76	3.76	.12	3.88	3.76	.12	3.88
Total.....	\$31,474.45	\$2,248.33	\$29,226.12	\$12,128.04	\$2,485.03	\$14,613.07	\$12,128.04	\$2,485.01	\$14,613.05

ROCKINGHAM COUNTY.

Statement

Showing the receipts, less rebates paid on licenses surrendered, the pro rata expense of maintaining office, the amount distributable, and the amount paid each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Receipts less rebates.	Pro rata expense of maintaining office.	Amount distributable.	Amount paid city or town for the year ending April 30, 1904.			Amount paid county of Rockingham for the year ending April 30, 1904.		
				Paid July 31, 1903.	Paid July 30, 1904.	Total.	Paid July 31, 1903.	Paid July 30, 1904.	Total.
Candia	\$27.94	\$2.00	\$25.94	\$12.58	\$0.39	\$12.97	\$12.57	\$0.40	\$12.97
Chester	41.53	2.96	38.57	18.69	.60	19.29	18.69	.59	19.28
Deerfield	164.52	11.75	152.77	74.03	2.35	76.38	74.04	2.35	76.39
Derry	2,322.88	165.95	2,156.93	1,045.30	33.17	1,078.47	1,045.29	33.17	1,078.46
East Kingston	32.04	2.28	29.76	14.42	.46	14.88	14.42	.46	14.88
Epping	2,194.52	156.78	2,037.74	987.54	31.33	1,018.87	987.53	31.34	1,018.87
Exeter	142.09	10.15	131.94	63.94	2.03	65.97	63.94	2.03	65.97
Hampton	1,415.14	101.08	1,314.06	555.76	101.97	657.03	555.77	101.26	657.03
Kingston	233.61	16.69	216.92	74.64	33.82	108.46	74.64	33.82	108.46
Newcastle	43.20	3.08	40.12	19.44	.62	20.06	19.44	.62	20.06
Newfields	922.48	65.89	856.59	331.65	96.64	428.29	331.64	96.66	428.30
Newmarket	2,069.23	147.84	1,921.44	708.49	252.23	960.72	708.49	252.23	960.72
Northwood	16.59	1.13	15.46	.....	.....	7.71	.....	7.70	7.70
Northport	315.19	22.13	293.06	.....	146.34	146.34	.....	146.34	146.34
Portsmouth	33,623.94	2,402.22	31,221.72	14,647.95	965.41	15,613.36	14,647.95	965.41	15,613.36
Rye	43.56	3.46	40.10	21.85	.70	22.55	21.85	.70	22.55
Rye	84.88	6.06	78.82	38.20	1.21	39.41	38.19	1.22	39.41
Sandown	80.38	5.74	74.64	36.17	1.15	37.32	36.17	1.15	37.32
Total	\$43,783.77	\$3,127.62	\$40,656.15	\$18,650.65	\$1,677.43	\$20,328.08	\$18,650.62	\$1,677.45	\$20,328.07

STRAFFORD COUNTY.

Statement

Showing the receipts, less rebates paid on licenses surrendered, the pro rata expense of maintaining office, the amount distributable, and the amount paid each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Receipts less rebates.	Pro rata expense of main- taining office.	Amount distribu- table.	Amount paid city or town for the year ending April 30, 1904.			Amount paid county of Strafford for the year ending April 30, 1904.		
				Paid July 31, 1903.	Paid July 30, 1904.	Total.	Paid July 31, 1903.	Paid July 30, 1904.	Total.
Dover.....	\$25,170.58	\$1,798.05	\$23,372.53	\$11,064.04	\$622.23	\$11,686.27	\$11,064.04	\$622.22	\$11,686.26
Farmington.....	1,633.66	116.70	1,516.96	735.14	23.34	758.48	735.15	23.33	758.48
Milton.....	136.51	9.76	126.75	56.93	6.44	63.37	56.93	6.45	63.38
Rochester.....	8,960.35	640.04	8,320.31	3,743.16	417.00	4,160.16	3,743.16	416.99	4,160.15
Rollinsford.....	2,599.67	185.70	2,413.97	1,139.37	67.61	1,206.98	1,139.36	67.63	1,206.99
Somersworth.....	8,433.31	602.40	7,830.91	3,646.27	269.19	3,915.46	3,646.27	269.18	3,915.45
Total.....	\$46,934.08	\$3,852.65	\$43,081.43	\$20,384.91	\$1,405.81	\$21,790.72	\$20,384.91	\$1,405.80	\$21,790.71

SULLIVAN COUNTY.

Statement

Showing the receipts, less rebates paid on licenses surrendered, the pro rata expense of maintaining office, the amount distributable, and the amount paid each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Receipts less rebates.	Pro rata expense of maintaining office.	Amount distributable.	Amount paid city or town for the year ending April 30, 1904.			Amount paid county of Sullivan for the year ending April 30, 1904.		
				Paid July 31, 1903.	Paid July 30, 1904.	Total.	Paid July 31, 1903.	Paid July 30, 1904.	Total.
Charlestown.....	\$685.08	\$48.94	\$636.14	\$55.95	\$262.12	\$318.07	\$55.95	\$262.12	\$318.07
Claremont.....	3,185.94	227.59	2,958.35	1,185.77	233.41	1,479.18	1,185.77	233.40	1,479.17
Cornish.....	322.05	23.00	299.05	.....	149.52	149.52	.....	149.53	149.53
Croydon.....	26.21	1.87	24.34	.....	12.17	12.17	.....	12.17	12.17
Newport.....	1,374.37	98.17	1,276.20	196.59	441.51	638.10	196.59	441.51	638.10
Sunapee.....	166.12	11.87	154.25	74.75	2.38	77.13	74.76	2.36	77.12
Total.....	\$5,759.77	\$411.44	\$5,348.33	\$1,513.06	\$1,161.11	\$2,674.17	\$1,513.07	\$1,161.09	\$2,674.16

RECAPITULATION.

Counties.	Receipts less rebates.	Pro rata expense of main- taining office.	Amount distribu- table.	Amount paid cities and towns for the year ending April 30, 1904.			Amount paid county for the year ending April 30, 1904.		
				Paid July 31, 1903.	Paid July 30, 1904.	Total.	Paid July 31, 1903.	Paid July 30, 1904.	Total.
Belnap.	\$8,015.93	\$572.61	\$7,443.32	\$3,012.55	\$699.75	\$3,712.30	\$3,030.70	\$700.32	\$3,731.02
Carroll.	2,014.23	143.90	1,870.33	900.29	29.66	*929.95	918.43	30.22	*948.65
Cheshire.	17,378.66	1,241.41	16,137.25	6,930.20	1,138.43	8,068.63	6,930.19	1,138.43	8,068.62
Coös.	25,202.42	1,800.30	23,402.12	10,502.53	1,189.18	*11,691.71	10,521.50	1,189.81	*11,711.31
Grafton.	9,884.36	706.08	9,178.28	2,614.97	1,974.17	4,589.14	2,614.96	1,974.18	4,589.14
Hillsborough.	151,910.82	10,851.51	141,059.31	61,721.97	8,807.88	70,529.66	61,721.78	8,807.87	70,529.65
Merrimack.	31,474.45	2,248.33	29,226.12	12,128.04	2,485.03	14,613.07	12,198.04	2,485.01	14,613.05
Rockingham.	43,783.77	3,127.62	40,656.15	18,650.65	1,677.43	20,328.08	18,650.62	1,677.45	20,328.07
Strafford.	46,934.08	3,352.65	43,581.43	20,384.91	1,405.81	21,790.72	20,384.91	1,405.80	21,790.71
Sullivan.	5,759.77	411.44	5,348.33	1,513.06	1,161.11	2,674.17	1,513.07	1,161.09	2,674.16
Total.	\$342,858.49	\$24,455.85	\$317,902.64	\$138,558.98	\$20,568.45	*\$158,927.43	\$138,414.20	\$20,570.13	*\$158,984.38
Amount paid cities and towns									158,927.43
Total.									\$317,911.81

* Overpayment—See footnotes, Carroll and Coös Counties.

BELKNAP COUNTY.

Statement

Showing the receipts from May 1, 1904, to July 15, 1904, inclusive, the amount of 10 per cent. reserved on account of expenses, and rebates on surrendered licenses, for the year ending April 30, 1905, the amount available for distribution July 15, 1904, and the amount paid each city, town and county, July 30, 1904, on account of the year ending April 30, 1905.

Cities and Towns.	Receipts from May 1, 1904, to July 15, 1904, inclusive.	Reserved on account of expenses and rebates for year ending April 30, 1905.	Available for distribution July 15, 1904.	Paid city or town, July 30, 1904.	Paid county of Belknap, July 30, 1904.
Alton.....	\$659.73	\$65.97	\$593.76	\$296.88	\$296.88
Belmont.....	10.00	1.00	9.00	4.50	4.50
Laconia.....	7,481.60	748.16	6,733.44	3,366.72	3,366.72
Lake Winnepesaukee	22.02	2.20	19.82	*.....	19.82
Meredith.....	10.00	1.00	9.00	4.50	4.50
Tilton.....	930 06	93.00	837.00	418.50	418.50
Total.....	\$9,113.35	\$911.33	\$8,202.02	\$4,091.10	\$4,110.92

* One sixth class license exercised upon the waters of Lake Winnepesaukee in the counties of Belknap and Carroll, and not in any town in said counties. Fee divided equally between said counties. (See also Carroll county.)

CARROLL COUNTY.

Statement

Showing the receipts from May 1, 1904, to July 15, 1904, inclusive, the amount of 10 per cent. reserved on account of expenses, and rebates on surrendered licenses for the year ending April 30, 1905, the amount available for distribution July 15, 1904, and the amount paid each city, town and county, July 30, 1904, on account of the year ending April 30, 1905.

Cities and Towns.	Receipts from May 1, 1904, to July 15, 1904, in- clusive.	Reserved on ac- count of expen- ses and rebates for year ending April 30, 1905.	Available for dis- tribution, July 15, 1904.	Paid city or town, July 30, 1904.	Paid county of Carroll, July 30, 1904.
Bartlett.....	\$74.40	\$7.44	\$66.96	\$33.48	\$33.48
Conway.....	120.00	12.00	108.00	54.00	54.00
Jackson.....	41.00	4.10	36.90	18.45	18.45
Lake Winnepesaukee.	22.01	2.20	19.81	*.....	19.81
Ossipee.....	25.00	2.50	22.50	11.25	11.25
Wakefield.....	960.00	†104.27	855.73	427.86	427.87
Wolfeborough.....	1,120 00	112.00	1,008.00	504.00	504.00
Total.....	\$2,362.41	†\$244.51	\$2,117.90	\$1,049.04	\$1,068.86

* See footnote, Belknap county.

† Includes \$8.27, over payment to the town of Wakefield and the county of Carroll, for the year ending April 30, 1904. See footnote, page 35.

CHESHIRE COUNTY.

Statement

Showing the receipts from May 1, 1904, to July 15, 1904, inclusive, the amount of 10 per cent. reserved on account of expenses, and rebates on surrendered licenses for the year ending April 30, 1905, the amount available for distribution July 15, 1904, and the amount paid each city, town and county, July 30, 1904, on account of the year ending April 30, 1905.

Cities and Towns.	Receipts from May 1, 1904, to July 15, 1904, in- clusive.	Reserved on ac- count of expen- ses and rebates for year ending April 30, 1905.	Available for dis- tribution, July 15, 1904.	Paid city or town, July 30, 1904.	Paid county of Cheshire, July 30, 1904.
Alstead	\$250.00	\$25.00	\$225.00	\$112.50	\$112.50
Chesterfield.....	484.17	48.41	435.76	217.88	217.88
Harrisville	750.00	75.00	675.00	337.50	337.50
Hinsdale.....	2,410.00	241.00	2,169.00	1,084.50	1,084.50
Keene.....	12,360.00	1,236.00	11,124.00	5,562.00	5,562.00
Swanzey.....	350.00	35.00	315.00	157.50	157.50
Walpole.....	3,815.49	381.55	3,433.94	1,716.97	1,716.97
Winchester.....	2,450.00	245.00	2,205.00	1,102.50	1,102.50
Total.....	\$22,869.66	\$2,286.96	\$20,582.70	\$10,291.35	\$10,291.35

COOS COUNTY.

Statement

Showing the receipts from May 1, 1904, to July 15, 1904, inclusive, the amount of 10 per cent. reserved on account of expenses, and rebates on surrendered licenses, for the year ending April 30, 1905, the amount available for distribution July 15, 1904, and the amount paid each city, town and county, July 30, 1904, on account of the year ending April 30, 1905.

Cities and Towns.	Receipts from May 1, 1904, to July 15, 1904, in- clusive.	Reserved on ac- count of expen- ses and rebates for year ending April 30, 1905.	Available for dis- tribution, July 15, 1904.	Paid city or town, July 30, 1904.	Paid county of Coös, July 30, 1904.
Berlin.....	\$23,548.79	\$2,354.87	\$21,193.92	\$10,596.96	\$10,596.96
Carroll ..	975.71	97.57	878.14	439.07	439.07
Colebrook.....	120.00	12.00	108.00	54.00	54.00
Errol.....	49.33	4.93	44.40	22.20	22.20
Gorham.....	1,820.00	182.00	1,638.00	819.00	819.00
Jefferson.....	136.29	13.62	122.67	61.34	61.33
Lancaster.....	95.00	*10.40	84.60	42.30	42.30
Milan.....	510.00	51.00	459.00	229.50	229.50
Northumberland.....	1,602.00	160.20	1,441.80	720.90	720.90
Sargent's Purchase...	20.90	2.09	18.81	†.....	18.81
Stewartstown.....	519.39	51.93	467.46	233.73	233.73
Stratford.....	60.00	6.00	54.00	27.00	27.00
Whitefield.....	1,120.00	112.00	1,008.00	504.00	504.00
Total.....	\$30,577.41	*\$3,058.61	\$27,518.80	\$13,750.00	\$13,768.80

* Includes \$.90 overpayment to the town of Lancaster and the county of Coös for the year ending April 30, 1904. See footnote, page 37.

† No town organization. Fee paid to the county of Coös.

GRAFTON COUNTY.

Statement

Showing the receipts from May 1, 1904, to July 15, 1904, inclusive, the amount of 10 per cent. reserved on account of expenses, and rebates on surrendered licenses, for the year ending April 30, 1905, the amount available for distribution July 15, 1904, and the amount paid each city, town and county, July 30, 1904, on account of the year ending April 30, 1905.

Cities and Towns.	Receipts from May 1, 1904, to July 15, 1904, in- clusive.	Reserved on ac- count of expen- ses and rebates for year ending April 30, 1905.	Available for dis- tribution, July 15, 1904.	Paid city or town, July 30, 1904	Paid county of Grafton, July 30, 1904.
Ashland.....	\$620.00	\$62.00	\$558.00	\$279.00	\$279.00
Bethlehem.....	72.74	7.27	65.47	32.74	32.73
Bristol.....	60.00	6.00	54.00	27.00	27.00
Campton.....	10.00	1.00	9.00	4.50	4.50
Canaan.....	288.75	28.87	259.88	129.94	129.94
Enfield.....	2,057.79	205.78	1,852.01	926.00	926.01
Franconia.....	45.00	4.50	40.50	20.25	20.25
Haverhill.....	1,320.00	132.00	1,188.00	594.00	594.00
Lebanon.....	4,618.55	461.85	4,156.70	2,078.35	2,078.35
Lincoln.....	1,400.00	140.00	1,260.00	630.00	630.00
Lisbon.....	58.16	5.81	52.35	26.18	26.17
Littleton.....	30.00	3.00	27.00	13.50	13.50
Plymouth.....	930.00	93.00	837.00	418.50	418.50
Warren.....	40.00	4.00	36.00	18.00	18.00
Woodstock.....	460.00	46.00	414.00	207.00	207.00
Total.....	\$12,010.99	\$1,201.08	\$10,809.91	\$5,404.96	\$5,404.95

HILLSBOROUGH COUNTY.

Statement

Showing the receipts from May 1, 1904, to July 15, 1904, inclusive, the amount of 10 per cent. reserved on account of expenses, and rebates on surrendered licenses, for the year ending April 30, 1905, the amount available for distribution July 15, 1904, and the amount paid each city, town and county, July 30, 1904, on account of the year ending April 30, 1905.

Cities and Towns.	Receipts from May 1, 1904, to July 15, 1904, inclusive.	Reserved on account of expenses and rebates for year ending April 30, 1905.	Available for distribution, July 15, 1904.	Paid city or town July 30, 1904.	Paid county of Hillsborough July 30, 1904.
Antrim.....	\$10.00	\$1.00	\$9.00	\$4.50	\$4.50
Goffstown.....	20.00	2.00	18.00	9.00	9.00
Greenville.....	3,653.55	365.35	3,288.20	1,644.10	1,644.10
Hancock.....	34.82	3.48	31.34	15.67	15.67
Hillsborough.....	370.00	37.00	333.00	166.50	166.50
Manchester.....	107,275.37	10,727.53	96,547.84	48,273.92	48,273.92
Merrimack.....	650.00	65.00	585.00	292.50	292.50
Milford.....	2,480.00	248.00	2,232.00	1,116.00	1,116.00
Nashua.....	44,538.48	4,453.84	40,084.64	20,042.32	20,042.32
New Boston.....	185.00	18.50	166.50	83.25	83.25
New Ipswich.....	49.33	4.93	44.40	22.20	22.20
Peterborough.....	45.00	4.50	40.50	20.25	20.25
Wilton.....	2,160.00	216.00	1,944.00	972.00	972.00
Total.....	\$161,471.55	\$16,147.13	\$145,324.42	\$72,662.21	\$72,662.21

MERRIMACK COUNTY.

Statement

Showing the receipts from May 1, 1904, to July 15, 1904, inclusive, the amount of 10 per cent. reserved on account of expenses, and rebates on surrendered licenses, for the year ending April 30, 1905, the amount available for distribution July 15, 1904, and the amount paid each city, town and county, July 30, 1904, on account of the year ending April 30, 1905.

Cities and Towns.	Receipts from May 1, 1904, to July 15, 1904, in- clusive.	Reserved on ac- count of expen- ses and rebates for year ending April 30, 1905.	Available for dis- tribution, July 15, 1904.	Paid city or town July 30, 1904.	Paid county of Merrimack July 30, 1904.
Allentown.....	\$1,484.55	\$148.45	\$1,336.10	\$668.05	\$668.05
Andover.....	100.00	10.00	90.00	45.00	45.00
Concord.....	21,977.42	2,197.74	19,779.68	9,889.84	9,889.84
Franklin.....	6,060.00	606.00	5,454.00	2,727.00	2,727.00
Henniker.....	60.00	6.00	54.00	27.00	27.00
Hooksett.....	1,348.66	134.86	1,213.80	606.90	606.90
Hopkinton.....	60.00	6.00	54.00	27.00	27.00
Newbury.....	171.78	17.17	154.61	77.31	77.30
Pembroke.....	2,694.17	269.41	2,424.76	1,212.38	1,212.38
Pittsfield.....	1,518.39	151.83	1,366.56	683.28	683.28
Warner.....	10.00	1.00	9.00	4.50	4.50
Total.....	\$35,484.97	\$3,548.46	\$31,936.51	\$15,968.26	\$15,968.25

ROCKINGHAM COUNTY.

Statement

Showing the receipts from May 1, 1904, to July 15, 1904, inclusive, the amount of 10 per cent. reserved on account of expenses, and rebates on surrendered licenses, for the year ending April 30, 1905, the amount available for distribution July 15, 1904, and the amount paid each city, town and county, July 30, 1904, on account of the year ending April 30, 1905.

Cities and Towns.	Receipts from May 1, 1904, to July 15, 1904, in- clusive.	Reserved on ac- count of expen- ses and rebates for year ending April 30, 1905.	Available for dis- tribution, July 15, 1904.	Paid city or town, July 30, 1904.	Paid county of Rockingham, July 30, 1904.
Deerfield.....	\$150.00	\$15.00	\$135.00	\$67.50	\$67.50
Derry.....	2,820.00	282.00	2,538.00	1,269.00	1,269.00
Epping.....	2,610.00	261.00	2,349.00	1,174.50	1,174.50
Exeter.....	150.00	15.00	135.00	67.50	67.50
Hampton.....	1,469.25	146.92	1,322.33	661.17	661.16
Kingston.....	*396.20	39.62	356.58	178.29	178.29
Newcastle.....	44.03	4.40	39.63	19.81	19.82
Newfields.....	1,075.00	107.50	967.50	483.75	483.75
Newmarket.....	2,860.00	286.00	2,574.00	1,287.00	1,287.00
Northwood.....	25.00	2.50	22.50	11.25	11.25
Nottingham.....	500.00	50.00	450.00	225.00	225.00
Portsmouth.....	36,146.56	3,614.65	32,531.91	16,265.96	16,265.95
Raymond.....	10.00	1.00	9.00	4.50	4.50
Rye.....	91.26	9.12	82.14	41.07	41.07
Salem.....	45.00	4.50	40.50	20.25	20.25
Sandown.....	300.00	30.00	270.00	135.00	135.00
Total.....	*\$48,692.30	\$4,869.21	\$43,823.09	\$21,911.55	\$21,911.54

* Receipts less rebates.

STRAFFORD COUNTY.

Statement

Showing the receipts from May 1, 1904, to July 15, 1904, inclusive, the amount of 10 per cent. reserved on account of expenses, and rebates on surrendered licenses, for the year ending April 30, 1905, the amount available for distribution July 15, 1904, and the amount paid each city, town and county, July 30, 1904, on account of the year ending April 30, 1905.

Cities and Towns.	Receipts from May 1, 1904, to July 15, 1904, in- clusive.	Reserved on ac- count of expen- ses and rebates for year ending April 30, 1905.	Available for dis- tribution, July 15, 1904.	Paid city or town, July 30, 1904.	Paid county of Strafford, July 30, 1904.
Dover.....	\$25,137.74	\$2,513.77	\$22,623.97	\$11,311.98	\$11,311.99
Farmington.....	1,970.00	197.00	1,773.00	886.50	886.50
Milton.....	135.00	13.50	121.50	60.75	60.75
Rochester.....	9,528.35	952.83	8,575.52	4,287.76	4,287.76
Rollinsford.....	3,260.00	326.00	2,934.00	1,467.00	1,467.00
Somersworth.....	8,980.33	898.03	8,082.30	4,041.15	4,041.15
Total.....	\$49,011.42	\$4,901.13	\$44,110.29	\$22,055.14	\$22,055.15

SULLIVAN COUNTY.

Statement

Showing the receipts from May 1, 1904, to July 15, 1904, inclusive, the amount of 10 per cent. reserved on account of expenses, and rebates on surrendered licenses, for the year ending April 30, 1905, the amount available for distribution July 15, 1904, and the amount paid each city, town and county, July 30, 1904, on account of the year ending April 30, 1905.

Cities and Towns.	Receipts from May 1, 1904, to July 15, 1904, inclusive.	Reserved on account of expenses and rebates for year ending April 30, 1905.	Available for distribution July 15, 1904.	Paid city or town July 30, 1904.	Paid county of Sullivan July 30, 1904.
Charlestown.....	\$1,060.00	\$106.00	\$954.00	\$477.00	\$477.00
Claremont.....	3,975.85	397.58	3,578.27	1,789.14	1,789.13
Cornish.....	441.13	44.11	397.02	198.51	198.51
Croydon.....	25.00	2.50	22.50	11.25	11.25
Newport.....	1,930.00	193.00	1,737.00	868.50	868.50
Plainfield.....	20.90	2.09	18.81	9.40	9.41
Sunapee.....	300.00	30.00	270.00	135.00	135.00
Total	\$7,752.88	\$775.28	\$6,977.60	\$3,488.80	\$3,488.80

RECAPITULATION.

Counties.	Receipts from May 1, 1904, to July 15, 1904, in- clusive.	Reserved on ac- count of expen- ses and rebates for year ending April 30, 1905.	Available for dis- tribution July 15, 1904.	Paid cities and towns July 30, 1904.	Paid county July 30, 1904.
Belknap.....	\$9,113.35	\$911.33	\$8,202.02	\$4,091.10	\$4,110.92
Carroll.....	2,362.41	*244.51	2,117.90	1,049.04	1,068.86
Cheshire.....	22,869.66	2,286.96	20,582.70	10,291.35	10,291.35
Coös.....	30,577.41	*3,058.61	27,518.80	13,750.00	13,768.80
Grafton.....	12,010.99	1,201.08	10,809.91	5,404.96	5,404.95
Hillsborough.....	161,471.55	16,147.13	145,324.42	72,662.21	72,662.21
Merrimack.....	35,484.97	3,548.46	31,936.51	15,968.26	15,968.25
Rockingham.....	48,692.30	4,869.21	43,823.09	21,911.55	21,911.54
Strafford.....	49,011.42	4,901.13	44,110.29	22,055.14	22,055.15
Sullivan.....	7,752.88	775.28	6,977.60	3,488.80	3,488.80
Total.....	\$379,346.94	*\$37,943.70	\$341,403.24	\$170,672.41	\$170,730.83
Amount paid cities and towns.....					170,672.41
Total.....					\$341,403.24

* See foot notes, Carroll and Coös counties.

BELKNAP COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Alton.....	\$659.73	.....	.....	\$659.73	.....	\$659.73
Belmont.....	10.00	.....	.....	10.00	.....	10.00
Laconia.....	8,150.64	\$30.00	.....	8,180.64	.....	8,180.64
Lake Winnepesaukee*..	22.02	.....	.....	22.02	.....	22.02
Meredith.....	10.00	.....	.....	10.00	.....	10.00
Tilton.....	930.00	.....	.....	930.00	.....	930.00
Total.....	\$9,782.39	\$30.00	.....	\$9,812.39	.....	\$9,812.39

* One sixth-class license exercised upon the waters of Lake Winnepesaukee in the counties of Belknap and Carroll, and not in any town in said counties. (See also Carroll County.)

CARROLL COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Bartlett.....	\$74.40	.....	.....	\$74.40	.....	\$74.40
Conway.....	195.54	.....	.....	195.54	.....	195.54
Jackson.....	41.00	.....	.....	41.00	.....	41.00
Lake Winnepesaukee*..	22.01	.....	.....	22.01	.....	22.01
Ossipee.....	25.00	.....	.....	25.00	.....	25.00
Wakefield.....	960.00	.....	.....	960.00	.....	960.00
Wolfeborough.....	1,120.00	.....	.....	1,120.00	.....	1,120.00
Total.....	\$2,437.95	.....	.....	\$2,437.95	.....	\$2,437.95

* See footnote, Belknap County.

CHESHIRE COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Alstead	\$250.00	.....	.....	\$250.00	.....	\$250.00
Chesterfield	484.17	\$20.00	.....	504.17	.....	504.17
Harrisville	750.00	.....	.....	750.00	.....	750.00
Hinsdale	2,414.31	.....	.....	2,414.31	.....	2,414.31
Keene	13,479.03	20.00	.....	13,499.03	\$935.48	12,563.55
Swanzy	350.00	.....	.....	350.00	.....	350.00
Walpole	3,815.49	20.00	.....	3,835.49	.....	3,835.49
Winchester	2,450.00	.....	.....	2,450.00	.....	2,450.00
Total	\$23,993.00	\$60.00	.....	\$24,053.00	\$935.48	\$23,117.52

COOS COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Berlin.....	\$24,141.57	\$60.00	.....	\$24,201.57	.....	\$24,201.57
Carroll.....	955.71	40.00	.....	995.71	.....	995.71
Colebrook.....	110.00	10.00	.....	120.00	.....	120.00
Errol.....	49.33	.....	.....	49.33	.....	49.33
Gorham.....	1,820.00	.....	.....	1,820.00	.....	1,820.00
Jefferson.....	136.29	.....	.....	136.29	.....	136.29
Lancaster.....	95.00	.....	.....	95.00	.....	95.00
Milan.....	510.00	.....	.....	510.00	.....	510.00
Northumberland.....	1,602.00	.....	.....	1,602.00	.....	1,602.00
Sargent's Purchase.....	20.90	.....	.....	20.90	.....	20.90
Stewartstown.....	662.42	10.00	.....	672.42	.....	672.42
Stratford.....	60.00	.....	.....	60.00	.....	60.00
Whitefield.....	1,120.00	.....	.....	1,120.00	.....	1,120.00
Total.....	\$31,283.22	\$120.00	.....	\$31,403.22	.....	\$31,403.22

GRAFTON COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Ashland.....	\$620.00	\$20.00	.....	\$640.00	.....	\$640.00
Benton.....	18.95	.....	.....	18.95	.....	18.95
Bethlehem.....	72.74	.....	.....	72.74	.....	72.74
Bristol.....	60.00	.....	.....	60.00	.....	60.00
Campton.....	10.00	.....	.....	10.00	.....	10.00
Canaan.....	288.75	.....	\$522.50	811.25	.....	811.25
Enfield.....	2,057.79	.....	.....	2,057.79	.....	2,057.79
Franconia.....	45.00	.....	.....	45.00	.....	45.00
Haverhill.....	1,320.00	.....	.....	1,320.00	.....	1,320.00
Lebanon.....	4,919.63	.....	.....	4,919.63	.....	4,919.63
Lincoln.....	1,400.00	.....	.....	1,400.00	.....	1,400.00
Lisbon.....	77.51	.....	.....	77.51	.....	77.51
Littleton.....	30.00	.....	.....	30.00	.....	30.00
Plymouth.....	1,016.11	.....	.....	1,016.11	.....	1,016.11
Warren.....	40.00	.....	.....	40.00	.....	40.00
Woodstock.....	612.42	.....	.....	612.42	.....	612.42
Total.	\$12,588.90	\$20.00	\$522.50	\$13,131.40	.....	\$13,131.40

HILLSBOROUGH COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Antrim.....	\$10.00			\$10.00		\$10.00
Goffstown.....	20.00			20.00		20.00
Greenville.....	3,653.55			3,653.55		3,653.55
Hancock.....	34.82			34.82		34.82
Hillsborough.....	459.38			459.38		459.38
Manchester.....	107,953.87	\$60.00		108,013.87		108,013.87
Merrimack.....	650.00			650.00		650.00
Milford.....	2,460.00	20.00		2,480.00		2,480.00
Nashua.....	46,455.06	70.00		46,525.06	\$973.02	45,552.04
New Boston.....	185.00			185.00		185.00
New Ipswich.....	49.33			49.33		49.33
Peterborough.....	45.00			45.00		45.00
Wilton.....	2,160.00			2,160.00		2,160.00
Total.....	\$164,136.01	\$150.00		\$164,286.01	\$973.02	\$163,312.99

MERRIMACK COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Allenstown	\$1,484.55	\$10.00	.....	\$1,494.55	.....	\$1,494.55
Andover	100.00	.....	.....	100.00	.....	100.00
Concord	22,574.03	20.00	.....	22,594.03	.....	22,594.03
Franklin	6,076.94	.....	.....	6,076.94	.....	6,076.94
Henniker	60.00	.....	.....	60.00	.....	60.00
Hooksett	1,348.66	.....	.....	1,348.66	.....	1,348.66
Hopkinton	97.90	.....	.....	97.90	.....	97.90
Newbury	171.78	.....	.....	171.78	.....	171.78
Pembroke	2,694.17	.....	.....	2,694.17	.....	2,694.17
Pittsfield	1,518.39	.....	.....	1,518.39	.....	1,518.39
Warner	10.00	.....	.....	10.00	.....	10.00
Total	\$36,136.42	\$30.00	.....	\$36,166.42	.....	\$36,166.42

ROCKINGHAM COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Deerfield	\$150.00 .....	.....	.....	\$150.00 ..	.....	\$150.00
Derry	2,820.00 .....	.....	.....	2,820.00 .....	.....	2,820.00
Epping	2,610.00 .....	.....	.....	2,610.00 .....	.....	2,610.00
Exeter	150.00 .....	.....	.....	150.00 .....	.....	150.00
Hampton	1,469.25	\$10.00 .....	.....	1,479.25 .....	.....	1,479.25
Kingston	563.98 .....	.....	.....	563.98	\$167.78	396.20
Newcastle	44.03 .....	.....	.....	44.03 .....	.....	44.03
Newfields	1,075.00 .....	.....	.....	1,075.00 .....	.....	1,075.00
Newmarket	3,075.32 .....	.....	.....	3,075.32	216.13	2,859.19
Northwood	25.00 .....	.....	.....	25.00 .....	.....	25.00
Nottingham	500.00 .....	.....	.....	500.00 .....	.....	500.00
Portsmouth	36,146.56	20.00 .....	.....	36,166.56 .....	.....	36,166.56
Raymond	10.00 .....	.....	.....	10.00 .....	.....	10.00
Rye	91.26 .....	.....	.....	91.26 .....	.....	91.26
Salem	45.00 .....	.....	.....	45.00 .....	.....	45.00
Sandown	300.00 .....	.....	.....	300.00 .....	.....	300.00
Total	\$49,075.40	\$30.00 .....	.....	\$49,105.40	\$883.91	\$48,721.49

STRAFFORD COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Dover.....	\$25,373.22	\$10.00	.....	\$25,383.22	.....	\$25,383.22
Farmington	1,970.00	.....	.....	1,970.00	.....	1,970.00
Milton.....	152.88	.....	.....	152.88	.....	152.88
Rochester.....	9,528.35	20.00	.....	9,548.35	.....	9,548.35
Rollinsford	3,260.00	.....	.....	3,260.00	.....	3,260.00
Somersworth.....	9,209.36	20.00	.....	9,229.36	.....	9,229.36
Total.....	\$49,493.81	\$50.00	.....	\$49,543.81	.....	\$49,543.81

SULLIVAN COUNTY.

Statement

Showing the amount received from license fees, transfer fees and forfeitures, the total receipts, the amount of rebates paid on licenses surrendered, and the receipts less rebates, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Charlestown.....	\$1,060.00	.....	.....	\$1,060.00	.....	\$1,060.00
Claremont	3,975.85	\$10.00	.....	3,985.85	.....	3,985.85
Cornish	441.13	.....	.....	441.13	.....	441.13
Croydon.	25.00	.....	.....	25.00	.....	25.00
Newport	1,930.00	.....	.....	1,930.00	.....	1,930.00
Plainfield	20.90	.....	.....	20.90	.....	20.90
Sunapee.....	300.00	20.00	.....	320.00	.....	320.00
Total.....	\$7,752.88	\$30.00	.....	\$7,782.88	.....	\$7,782.88

RECAPITULATION

From May 1, 1904, to December 31, 1904, inclusive.

Counties.	Amount received from			Total receipts.	Rebates paid.	Receipts less rebates.
	License fees.	Transfer fees.	Forfeitures.			
Belknap.....	\$9,782.39	\$30.00	.....	\$9,812.39	.....	\$9,812.39
Carroll.....	2,437.95	.....	.....	2,437.95	.....	2,437.95
Cheshire.....	23,993.00	60.00	.....	24,053.00	\$935.48	23,117.52
Cooks.....	31,283.22	120.00	.....	31,403.22	.....	31,403.22
Grafton.....	12,588.90	20.00	\$522.50	13,131.40	.....	13,131.40
Hillsborough.....	164,136.01	150.00	.....	164,286.01	973.02	163,312.99
Merrimack.....	36,136.42	30.00	.....	36,166.42	.....	36,166.42
Rockingham.....	49,075.40	30.00	.....	49,105.40	383.91	48,721.49
Strafford.....	49,493.81	50.00	.....	49,543.81	.....	49,543.81
Sullivan.....	7,752.88	30.00	.....	7,782.88	.....	7,782.88
Total.....	\$386,679.98	\$520.00	\$522.50	\$387,722.48	\$2,292.41	\$385,430.07

TABLE

Showing, by counties, the amount of fees received from each class of licenses, from May 1, 1904, to December 31, 1904, inclusive.

Counties.	Class.								Total.
	1	2	3	4	5	6	7	8	
Belknap	\$2,661.33	\$4,179.04	\$2,800.00	.....	\$120.00	\$22.02	.....	.....	\$9,782.39
Carroll	913.94	950.00	1,100.00	.....	50.00	122.01	.....	.....	2,437.95
Cheshire	3,700.83	14,425.81	5,482.13	.....	84.23	.....	.....	\$300.00	23,993.00
Coös	3,704.00	20,080.38	5,311.91	.....	186.92	.....	.....	.....	31,283.22
Grafton	2,600.74	2,000.00	6,530.61	\$1,200.00	198.55	50.00	.....	.....	12,588.90
Hillsborough	11,961.52	122,763.75	24,511.51	1,715.00	642.75	75.00	\$1,460.48	1,000.00	164,136.01
Merrimack	4,875.54	23,949.52	6,894.95	.....	316.41	.....	.....	.....	36,136.42
Rockingham	5,212.71	33,520.16	5,827.86	.....	177.90	245.09	91.67	4,000.00	49,075.40
Strafford	4,902.83	38,891.99	5,400.00	.....	248.99	50.00	.....	.....	49,493.81
Sullivan	2,141.60	3,937.10	1,574.18	.....	100.00	.....	.....	.....	7,752.88
Total	\$44,677.04	\$264,003.76	\$65,542.25	\$2,915.00	\$2,125.75	\$564.03	\$1,552.15	\$5,300.00	\$386,679.98

BELKNAP COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Alton	3	...	2	...	1	...	...	...	6	\$469.85
Belmont .....	...	...	...	...	1	...	...	...	1	8.91
Gilford	1	...	...	...	...	...	...	...	1	23.45
Laconia	6	5	11	...	8	...	...	...	30	6,928.45
Lake Winnepesaukee*..	...	...	...	...	...	1	...	...	1	20.16
Meredith .....	...	...	...	...	3	...	...	...	3	19.01
Tilton	1	2	2	...	3	...	...	...	8	526.10
Total.....	11	7	15	...	16	1	...	...	50	\$7,995.93

* License exercised upon the waters of Lake Winnepesaukee in the counties of Belknap and Carroll, and not in any town in said counties. (See also Carroll County.)

CARROLL COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Bartlett.....	1					1			2	\$65.39
Conway.....	4				2				6	172.36
Jackson.....	1					1			1	38.58
Lake Winnepesaukee*..							1		1	20.16
Ossipee.....	1								1	20.43
Wakefield.....	4		3			1	1		10	857.43
Wolfeborough.....	2		1			3			6	875.16
Total.....	13	1	4		6	3			27	\$2,049.51

* See foot-note, Belknap County.

CHESHIRE COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Alstead.....	1	...	1	...	...	...	...	...	2	\$161.02
Chesterfield...	6	...	4	...	...	...	...	...	10	599.70
Dublin.....	1	...	...	...	...	...	...	...	1	20.36
Harrisville...	1	2	1	...	...	...	...	...	4	517.82
Hinsdale.....	1	2	2	...	1	...	...	...	6	1,618.52
Keene.....	4	8	2	...	5	...	...	...	19	10,450.13
Swanzey.....	3	...	...	...	...	...	...	...	3	336.09
Troy.....	1	...	...	...	...	...	...	...	1	35.08
Walpole.....	3	5	7	...	1	...	...	1	17	2,418.19
Winchester...	3	...	4	...	...	...	...	...	7	1,161.75
Total.....	24	17	21	...	7	...	...	1	70	\$17,318.66

COOS COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Berlin	7	16	9	...	6	...	...	...	38	\$19,920.20
Carroll.....	6	...	3	...	...	...	...	...	9	844.49
Colebrook.....	2	...	...	...	1	...	...	...	3	61.53
Errol.....	1	...	...	...	...	...	...	...	1	29.03
Gorham.....	2	3	3	...	2	...	...	...	10	889.72
Jefferson.....	1	...	...	...	...	...	...	...	1	125.42
Lancaster.....	1	...	...	...	3	...	...	...	4	61.20
Milan.....	3	...	4	...	1	...	...	...	8	556.28
Northumberland.....	4	2	4	...	2	...	...	...	12	1,237.73
Sargent's Purchase.....	1	...	...	...	...	...	...	...	1	21.11
Stewartstown.....	2	1	2	...	1	...	...	...	6	522.20
Stratford.....	2	...	...	...	1	...	...	...	3	32.84
Whitefield.....	2	2	3	...	2	...	...	...	9	834.75
Total	34	24	28	...	19	...	...	...	105	\$25,136.50

GRAFTON COUNTY.

Statement

Showing the number in each class and the total number of licenses granted, and the amount of fees received from same for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Ashland	2		3		2				7	\$469.83
Benton	1								1	20.36
Bethlehem.....	2				1				3	71.40
Bristol.....	1				1				2	47.28
Campton					1				1	4.47
Canaan	2				1				3	253.69
Enfield	3	2			1				6	1,466.44
Franconia	1	1							1	85.55
Grafton	1	1							1	19.56
Haverhill.....	2		1		2				5	1,133.26
Lebanon	4		5	2	1				12	4,199.68
Lincoln.....			1	1					2	936.56
Lisbon.....	4		1		2				6	91.95
Littleton.....					3				3	27.29
Plymouth.....	2		3		3	1			9	737.61
Warren.....	1								1	32.69
Woodstock.....	1		2		1				4	266.79
Total.....	27	2	15	3	19	1			67	\$9,864.36

HILLSBOROUGH COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Antrim	1				1				1	\$7.63
Goffstown	1				2				3	46.65
Greenville	2	4	3		1				10	1,197.64
Hancock	1								1	25.13
Hillsborough	2		2		2				6	301.18
Manchester	9	69	22	8	44		9	1	162	99,605.10
Merrimack	3		2						5	491.68
Milford	1	3	1		2				7	2,440.96
Nashua	11	45	15		13	1			85	43,835.50
New Boston	1		1		1				3	154.69
New Ipswich	1								1	19.83
Peterborough	1				2				3	38.38
Temple	1								1	18.95
Wilton	1	5	1		1				8	1,903.86
Total	35	126	47	8	69	1	9	1	296	\$150,087.18

MERRIMACK COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Allenstown.....		5							5	\$1,014.78
Andover.....	1		1						2	531.58
Concord.....	6	19	7		23				55	18,716.32
Franklin.....	2	2	5	1	7				17	5,860.58
Henniker.....	1				1				2	49.98
Hooksett.....	1	4	1						6	897.19
Hopkinton.....	1				1				2	27.53
Newbury.....	1								1	29.08
New London.....					1				1	8.09
Pembroke.....	1	8	2		3				14	2,293.97
Pittsfield.....	2	4	4		2				12	1,466.99
Warner.....					1				1	8.36
Total.....	16	42	20	1	39				118	\$30,904.45

ROCKINGHAM COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Candia.....	1								1	\$27.94
Chester.....	1								1	41.53
Deerfield.....	1		1						2	164.52
Derry ...	2	3	2		2				9	2,322.88
East Kingston.....	1								1	32.04
Epping.....	1	2			1				4	2,194.52
Exeter.....	1				6				7	142.09
Hampton.....	6	2	5		1				14	1,415.14
Kingston.....	2		1						3	233.61
Newcastle.....	1								1	43.20
Newfields.....	1	2	4			1			8	922.48
Newmarket.....	3	6	3		1				13	2,069.23
Northwood.....	1								1	16.59
Nottingham.....	1	1	1						3	315.19
Portsmouth.....	6	47	12		8	1		3	77	34,153.35
Raymond.....	1				1				2	48.56
Rye.....	3								3	84.88
Sandown.....	2								2	80.38
Total.....	35	63	29	...	20	2	...	3	152	\$41,308.18

STRAFFORD COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Dover	11	35	9	1	11	.....	.....	.....	67	\$25,427.25
Farmington.....	1	3	1	.....	2	.....	.....	.....	7	1,633.66
Milton.....	3	.....	.....	.....	1	.....	.....	.....	4	126.51
Rochester.....	4	18	7	.....	8	.....	.....	.....	37	8,890.35
Rollinsford.....	1	5	4	.....	1	.....	.....	.....	11	2,599.67
Somersworth.....	3	19	5	.....	5	1	.....	.....	33	8,403.31
Total	23	80	26	1	28	1	.....	.....	159	\$47,080.75

SULLIVAN COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, for the year ending April 30, 1904.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Charlestown.....	2	...	1	...	1	...	...	...	4	\$685.08
Claremont.....	4	9	4	...	7	...	...	...	24	3,185.94
Cornish.....	1	1	1	...	...	...	...	...	3	322.05
Croydon.....	1	...	...	...	...	...	...	...	1	26.21
Newport.....	4	1	...	...	3	...	...	...	8	1,374.37
Sunapee.....	1	...	1	...	...	...	...	...	2	166.12
Total.....	13	11	7	...	11	...	...	...	42	\$5,759.77

RECAPITULATION

For the year ending April 30, 1904.

Counties,	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Belknap.....	11	7	15	...	16	1	...	...	50	\$7,995.93
Carroll.....	13	1	4	...	6	3	...	...	27	2,049.51
Cheshire.....	24	17	21	...	7	...	...	1	70	17,318.66
Coös.....	34	24	28	...	19	...	...	...	105	25,136.50
Grafton.....	27	2	15	3	19	1	...	...	67	9,864.36
Hillsborough.....	35	126	47	8	69	1	9	1	296	150,087.18
Merrimack.....	16	42	20	1	39	...	...	...	118	30,904.45
Rockingham.....	35	63	29	...	20	2	...	3	152	44,308.18
Strafford.....	23	80	26	1	28	1	...	...	159	47,080.75
Sullivan.....	13	11	7	...	11	...	...	...	42	5,759.77
Total	231	373	212	13	234	*9	9	5	*1,086	\$340,505.29

* One sixth-class license exercised upon the waters of Lake Winnepesaukee in the counties of Belknap and Carroll, and tabulated in both of said counties. Total number of sixth-class licenses granted, 8; total number of all classes, 1,085.

BELKNAP COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Alton.....	3	...	2	...	1	...	...	...	6	\$659.73
Belmont.....	...	...	...	...	1	...	...	...	1	10.00
Laconia.....	6	7	8	...	6	...	...	...	27	8,150.64
Lake Winnepesaukee*.	...	...	...	...	...	1	...	...	1	22.02
Meredith.....	...	...	...	...	1	...	...	...	1	10.00
Tilton.....	1	2	2	...	3	...	...	...	8	930.00
Total.....	10	9	12	...	12	1	...	...	44	\$9,782.39

*License exercised upon the waters of Lake Winnepesaukee in the counties of Belknap and Carroll, and not in any town in said counties. (See also Carroll County.

CARROLL COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Bartlett.....	1	.....	.....	.....	.....	1	.....	.....	2	\$74.40
Conway.....	4	.....	.....	.....	2	.....	.....	.....	6	196.54
Jackson.....	1	.....	.....	.....	.....	.....	.....	.....	1	41.00
Lake Winnepesaukee*.....	.....	.....	.....	.....	.....	1	.....	.....	1	22.01
Ossipee.....	1	.....	.....	.....	.....	.....	.....	.....	1	25.00
Wakefield.....	3	1	3	.....	1	1	.....	.....	9	960.00
Wolfeborough.....	2	.....	1	.....	2	.....	.....	.....	5	1,120.00
Total.....	12	1	4	.....	5	3	.....	.....	25	\$2,437.95

* See footnote, Belknap County.

CHESHIRE COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Number of licenses granted.									Amount of fees received.
	Class.								Total.	
	1	2	3	4	5	6	7	8		
Alstead.....	1	....	1	....	....	....	....	....	2	\$250.00
Chesterfield.....	4	....	2	....	....	....	....	....	6	484.17
Harrisville.....	1	2	1	....	....	....	....	....	4	750.00
Hinsdale.....	1	2	2	....	2	....	....	....	7	2,414.31
Keene.....	4	9	2	....	5	....	....	....	20	13,479.03
Swanzey.....	3	....	....	....	....	....	....	....	3	350.00
Walpole.....	3	6	6	....	2	....	....	1	18	3,815.49
Winchester.....	3	....	4	....	....	....	....	....	7	2,450.00
Total.....	20	19	18	....	9	....	....	1	67	\$23,993.00

COOS COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Berlin.....	8	18	5	....	6	....	....	....	37	\$24,141.57
Carroll.....	5	....	4	....	....	....	....	....	9	955.71
Colebrook.....	2	....	....	....	1	....	....	....	3	110.00
Errol.....	1	....	....	....	....	....	....	....	1	49.33
Gorham.....	2	3	....	....	2	....	....	....	7	1,820.00
Jefferson.....	1	....	....	....	1	....	....	....	2	136.29
Lancaster.....	1	....	....	....	2	....	....	....	3	95.00
Milan.....	2	....	2	....	1	....	....	....	5	510.00
Northumberland.....	4	2	4	....	2	....	....	....	12	1,602.00
Sargent's Purchase....	1	....	....	....	....	....	....	....	1	20.90
Stewartstown.....	2	1	2	....	1	....	....	....	6	662.42
Stratford.....	2	....	....	....	1	....	....	....	3	60.00
Whitefield.....	2	2	3	....	2	....	....	....	9	1,120.00
Total.....	33	26	20	....	19	....	....	....	98	\$31,283.22

GRAFTON COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Ashland.....	2	....	3	..	2	....	....	....	7	\$620.00
Benton.....	1	....	....	....	....	....	....	....	1	18.95
Bethlehem.....	2	....	....	....	1	....	....	....	3	72.74
Bristol.....	1	....	....	....	1	....	....	....	2	60.00
Campton.....	....	....	....	....	1	....	....	....	1	10.00
Cannan.....	2	....	....	....	1	....	....	....	3	288.75
Enfield.....	2	2	....	....	1	....	....	....	5	2,057.79
Franconia.....	1	....	....	....	....	....	....	....	1	45.00
Haverhill.....	2	....	1	....	2	....	....	....	5	1,320.00
Lebanon.....	4	....	5	1	2	....	....	....	12	4,919.63
Lincoln.....	....	....	1	1	....	....	....	....	2	1,400.00
Lisbon.....	2	....	....	....	2	....	....	....	4	77.51
Littleton.....	....	....	....	....	3	....	....	....	3	30.00
Plymouth.....	2	....	4	....	3	1	....	....	10	1,016.11
Warren.....	1	....	....	....	....	....	....	....	1	40.00
Woodstock.....	1	....	2	....	1	....	....	....	4	612.42
Total.....	23	2	16	2	20	1	....	....	64	\$12,588.90

HILLSBOROUGH COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Number of licenses granted.								Amount of fees received.	
	Class.									Total.
	1	2	3	4	5	6	7	8		
Antrim.....					1				1	\$10.00
Goffstown.....					2				2	20.00
Greenville.....		2	1		1				6	3,653.55
Hancock.....	1								1	34.82
Hillsborough.....	1	1	1		2				5	459.38
Manchester.....	7	70	19	3	42		10	1	152	107,953.87
Merrimack.....	3		2						5	650.00
Milford.....	1	3			1				5	2,460.00
Nashua.....	10	42	14		13	1			80	46,455.06
New Boston.....	1		1		1				3	185.00
New Ipswich.....	1								1	49.33
Peterborough.....	1				2				3	45.00
Wilton.....	1	4	2		1				8	2,160.00
Total.....	29	122	40	3	66	1	10	1	272	\$164,136.01

MERRIMACK COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Allenstown.....	...	6	...	...	...	...	...	...	6	\$1,484.55
Andover.....	1	...	...	...	...	...	...	...	1	100.00
Concord.....	6	19	8	...	18	...	...	...	51	22,574.03
Franklin.....	3	3	2	...	6	...	...	...	14	5,076.94
Henniker.....	1	...	...	...	1	...	...	...	2	60.00
Hooksett.....	1	4	1	...	...	...	...	...	6	1,348.66
Hopkinton.....	2	...	...	...	1	...	...	...	3	97.90
Newbury.....	2	...	...	...	...	...	...	...	2	171.78
Pembroke.....	1	7	2	...	3	...	...	...	13	2,694.17
Pittsfield.....	1	4	3	...	2	...	...	...	10	1,518.39
Warner...	...	...	...	...	1	...	...	...	1	10.00
Total.....	18	43	16	...	32	...	...	...	109	\$36,136.42

ROCKINGHAM COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Deerfield.....	1	...	1	...	...	...	...	...	2	\$150.00
Derry.....	3	2	3	...	2	...	...	...	10	2,820.00
Epping.....	1	2	...	...	1	...	...	...	4	2,610.00
Exeter.....	1	...	...	...	5	...	...	...	6	150.00
Hampton.....	5	1	4	...	2	...	1	...	13	1,469.25
Kingston.....	3	...	3	...	...	...	...	...	6	563.98
Newcastle.....	1	...	...	...	...	...	...	...	1	44.03
Newfields.....	1	2	4	...	...	1	...	...	8	1,075.00
Newmarket.....	3	7	3	...	1	...	...	...	14	3,075.32
Northwood.....	1	...	...	...	...	...	...	...	1	25.00
Nottingham.....	1	1	1	...	...	...	...	...	3	500.00
Portsmouth.....	6	45	10	...	6	1	...	3	71	36,146.56
Raymond.....	...	...	...	...	1	...	...	...	1	10.00
Rye.....	3	...	...	...	...	...	...	...	3	91.26
Salem.....	...	...	...	...	...	1	...	...	1	45.00
Sandown.....	2	...	2	...	...	...	...	...	4	300.00
Total.....	32	60	31	....	18	3	1	3	148	\$49,075.40

STRAFFORD COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Number of licenses granted.									Amount of fees received.
	Class.								Total.	
	1	2	3	4	5	6	7	8		
Dover.....	10	34	9	....	11	....	....	....	64	\$25,373.22
Farmington.....	1	3	1	....	2	....	....	....	7	1,970.00
Milton.....	4	....	....	....	1	....	....	....	5	152.88
Rochester.....	3	19	5	....	6	....	....	....	33	9,528.35
Rollinsford.....	1	5	5	....	1	....	....	....	12	3,260.00
Somersworth.....	3	19	5	....	4	1	....	....	32	9,209.36
Total.....	22	80	25	....	25	1	....	....	153	\$49,493.81

SULLIVAN COUNTY.

Statement

Showing the number of each class and the total number of licenses granted, and the amount of fees received from same, for each city, town and county, from May 1, 1904, to December 31, 1904, inclusive.

Cities and Towns.	Number of licenses granted.								Total.	Amount of fees received.
	Class.									
	1	2	3	4	5	6	7	8		
Charlestown.....	1	...	1	...	1	...	...	...	3	\$1,060.00
Claremont.....	3	9	4	...	6	...	...	...	22	3,975.85
Cornish.....	1	1	1	...	...	...	...	...	3	441.13
Croydon.....	1	...	...	...	...	...	...	...	1	25.00
Newport.....	3	1	...	...	3	...	...	...	7	1,930.00
Plainfield.....	1	...	...	...	...	...	...	...	1	20.90
Sunapee.....	1	...	1	...	...	...	...	...	2	300.00
Total.....	11	11	7	...	10	...	...	...	39	\$7,752.88

RECAPITULATION.

From May 1, 1904, to December 31, 1904, inclusive.

Counties.	Number of licenses granted.									Amount of fees received.
	Class.								Total.	
	1	2	3	4	5	6	7	8		
Belknap.....	10	9	12	....	12	1	....	....	44	\$9,782.39
Carroll.....	12	1	4	....	5	3	....	....	25	2,437.95
Cheshire.....	20	19	18	....	9	....	....	1	67	23,993.00
Coös.....	33	26	20	....	19	....	....	....	98	31,283.22
Grafton.....	23	2	16	2	20	1	....	....	64	12,588.90
Hillsborough.....	29	122	40	3	66	1	10	1	272	164,136.01
Merrimack.....	18	43	16	....	32	....	....	....	109	36,136.42
Rockingham.....	32	60	31	....	18	3	1	3	143	49,075.40
Strafford.....	22	80	25	....	25	1	....	....	153	49,493.81
Sullivan.....	11	11	7	....	10	....	....	....	39	7,752.88
Total.....	210	373	189	5	216	*10	11	5	*1,019	\$386,679.98

*One sixth class license exercised upon the waters of Lake Winnepesaukee in the counties of Belknap and Carroll, and tabulated in both of said counties. Total number of sixth class licenses granted, 9; total number of all classes, 1,018.

LIST OF LICENSES GRANTED

From January 1, 1904, to April 30, 1904, inclusive.

(License year 1903-1904.)

Name of Licensee.	Street and Number.	Class.
BERLIN.		
Vallieres & Co.....	Commercial House.....	1
Albert Croteau.....	Hotel Albert.....	1
Albert Croteau.....	Hotel Albert.....	3
CARROLL.		
The Barron, Merrill & Barron Co..	Fabyan Cottage	1
CHESTERFIELD.		
Wallace K. Ware..	Ware's Hotel.....	3
COLEBROOK.		
Charles E. Hartshorn.....	New Colebrook House.....	1
CONCORD.		
Thomas H. Winslow.....	15 Main Street, Penacook.....	5
John R. Berry.....	165 North Main Street.....	5
T. J. Sullivan.....	2 Pleasant Street Extension....	2
GORHAM.		
Charles A. Chandler.....	Androscoggin Street.....	2
HILLSBOROUGH.		
Thomas Gray & Co.....	Valley Hotel, Hillsborough Bridge.	1
Thomas Gray & Co.....	Valley Hotel, Hillsborough Bridge.	3
KEENE.		
J. Fortier & Co.....	Hotel Fortier.....	1
LANCASTER.		
F. B. Lewis.....	Main Street.....	5
LISBON.		
Featherstone & Moulton.....	Hotel Moulton.....	1
MANCHESTER.		
William H. Heath†.....	1104 Elm Street.....	5
George Hosser.....	32 Manchester Street.....	3
Thomas Lord...	New Manchester House.....	1
Godin & Co*.....	579 Elm Street.....	3
Joseph Masse.....	16 Concord Street.....	2
Grenier & Chandonnet.....	28 Concord Street.....	2
MEREDITH.		
Ned F. Sleeper.....	72 Main Street.....	5

*License transferred. See list, page 93-94.

†License revoked. See list, page 95.

LIST OF LICENSES GRANTED.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
MILAN.		
James R. Jordan.....	Hotel Milan.....	1
James R. Jordan.....	Hotel Milan.....	3
NASHUA.		
Charles H. Chagnon.....	Hotel, 28 Amory Street.....	1
John B. Terrien.....	The Montreal House.....	1
Charles E. Wright.....	Phoenix Hotel.....	1
NEWMARKET.		
Charles H. Mathes.....	Main Street.....	2
PORTSMOUTH.		
Helen A. Ward.....	11 McDonough Street.....	2
Andrew P. Preston.....	19 Congress Street.....	5
ROCHESTER.		
Irving A. Piercy.....	21 North Main Street.....	5
STRATFORD.		
Thomas C. Atkinson.....	Hotel Atkinson.....	1
WALPOLE.		
John H. Flavin.....	29 River Street, North Walpole....	2
WOLFEBOROUGH.		
N. H. Scott.....	South Main Street.....	5

LIST OF LICENSES TRANSFERRED

From January 1, 1904, to April 30, 1904, inclusive.

(License year, 1903-1904.)

Showing the present holder and location where exercised, and the licensee from whom, or location from which, transferred.

Name of Licensee.	Street and Number.	Class.
BERLIN.		
L. J. Cote.....	East side Green.....	3
Transferred from Main Street.		
L. J. Cote.....	East side Green.....	5
Transferred from Main Street.		
Napoleon Rouleau.....	49 Main Street.....	2
Transferred from Ferdinand A. Routhier.		
CARROLL.		
The Barron, Merrill & Barron Co. |	Fabyan Cottage.....	3
Transferred from Fabyan House.		
CONCORD.		
J. H. Cauley & Co.....	14 Pleasant Street.....	2
Transferred from Cauley & Coakley.		
Rumford Bottling Works.....	71 So. Main Street.....	3
Transferred from Rumford Bottling Works. (Ownership changed.)		
LACONIA.		
William P. Chester.....	Eagle Hotel.....	1
Transferred from James A. Twigg.		
MANCHESTER.		
John T. Harrington.....	562 Elm Street....	2
Transferred from Callan & Burns.		
Joseph St. Yves.....	15 Lake Avenue.....	2
Transferred from Boisvert & Rioux.		
Reinhardt Hecker.....	648 Elm Street.....	2
Transferred from Moore & Payne.		
Reinhardt Hecker*.....	197 Douglass Street.....	2
Transferred from 648 Elm Street.		
Quirin Bros.....	579 Elm Street.....	3
Transferred from Godin & Co.		
NASHUA.		
B. P. Clancy & Co.....	131 Temple Street.....	2
Transferred from John F. Clancy.		

LIST OF LICENSES TRANSFERRED.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
PORTSMOUTH.		
Calvin Page and Justin V. Hans- com, Trustees.....	Rockingham Hotel.....	1
Transferred from William K. Hill.		
Cornelius Regan.....	40 Vaughan Street.....	2
Transferred from 2 Russell Street.		
ROCHESTER.		
Joseph Warren.....	25 Summer Street.....	3
Transferred from Eugene W. Emerson.		
SOMERSWORTH.		
Jonas E. Ellis.....	Homestead Hotel.....	1
Transferred from Charles K. Drew.		
STEWARTSTOWN.		
George N. Pike.....	Main Street, West Stewartstown...	3
Transferred from Pike's Hotel.		
SWANZEY.		
Bigelow & Cantlin.....	Evans House.....	1
Transferred from Mary A. Evans.		
WALPOLE.		
Daniel W. Riley	62 Main Street, North Walpole....	2
Transferred from 40 Main Street.		
L. J. Vetterman Brewing Co.....	Highway, N. Walpole to Drews- ville	8
Transferred from Mountain Spring Co.		
WILTON.		
James J. Shea.....	Main Street.....	2
Transferred from Kennedy & Shea.		
John W. Fairfield.....	Main Street.....	2
Transferred from James C. Herley.		

*A second transfer of this license—see above list.

LIST OF LICENSES REVOKED.

From January 1, 1904, to April 30, 1904, inclusive.

(License Year 1903-1904.)

Name of Licensee.	Street and Number.	Class.
CANAAN.		
Charles H. Hare.....	Hotel Rand.....	1
Robert M. Johnson.....	Cardigan House.....	1
FRANKLIN.		
Ulric U. Brigham.....	343 Central Street.....	5
HILLSBOROUGH.		
Edward Reynolds and Caroline O. |	Valley Hotel, Hillsborough Br'ge	1
T. Reynolds.....		
MANCHESTER.		
Hotel Oxford Co.....	620 Elm Street.....	1
William H. Heath.....	1104 Elm Street.....	5
NASHUA.		
Charles C. Martel.....	44½ Canal Street.....	5
NEWPORT.		
Albert Corron.....	Hotel Laurel.....	1

LIST OF LICENSES SURRENDERED.

From January 1, 1904, to April 30, 1904, inclusive.

(License year, 1903-1904. Licensee deceased.)

Name of Licensee.	Street and Number.	Class.
MANCHESTER.		
Edward Wagner.....	New Manchester House.....	1
Edward Wagner.....	32 Manchester Street.....	3
PORTSMOUTH.		
James G. Ward.....	11 McDonough Street.....	2
WAKEFIELD.		
Frank P. White.....	Lovell Lake House.....	1

LIST OF LICENSES GRANTED

From May 1, 1904, to December 31, 1904, inclusive.

(License Year 1904-1905.)

BELKNAP COUNTY.

Name of Licensee.	Street and Number.	Class.
ALTON.		
J. L. Rollins & Co.....	The Savage Tavern.....	3
J. L. Rollins & Co.....	The Savage Tavern.....	1
John H. Fifield & Son.....	Fifield House.....	3
Laban G. Welch.....	Main Street.....	5
John H. Fifield and Charles L. Fifield.....	Fifield House.....	1
Frank H. McAlpine.....	Lake Winnepesaukee House.....	1
BELMONT.		
Edwin C. Bean.....	Main Street.....	5
LACONIA.		
Edmund C. Gross.....	25 Mill Street.....	3
Frank O. Wallace.....	New City Hotel.....	1
Harry D. Cilley.....	489 Main Street.....	3
William P. Chester*.....	Eagle Hotel.....	1
Napoleon J. Guay.....	8 Mill Street.....	2
Frank D. Sanborn.....	12 Mill Street.....	2
George F. Mallard.....	537 Main Street.....	5
George F. Mallard.....	537 Main Street.....	3
George A. Collins.....	57-59 Elm Street, Lakeport.....	5
Clarence W. Plummer.....	787 Union Avenue, Lakeport.....	5
George A. Quimby.....	522 Main Street.....	5
George A. Collins.....	57-59 Elm Street, Lakeport.....	3
William E. Foster.....	461 Main Street.....	5
George A. Quimby.....	522 Main Street.....	3
Philip Blais.....	255 Union Avenue.....	3
James H. Story.....	528 Main Street.....	5
Herbert H. Caldon.....	Central House.....	1
John Thomas Jenkins.....	18 Mill Street.....	2
Noah W. Goss*.....	Mt. Belknap House, Lakeport.....	1
Noah W. Goss*.....	766 Union Avenue, Lakeport.....	3
Levi W. Downs.....	554 Main Street.....	2
George Picard.....	510 Main Street.....	2
Frank Z. Tremblay.....	53 Fore Street.....	3
William N. Charles.....	Phoenix Hotel.....	1
Herman Dow.....	471 Main Street.....	2
J. Alonzo Greene.....	Hotel Weirs, Weirs.....	1
Goss Brothers.....	766 Union Avenue, Lakeport.....	2
MEREDITH.		
Charles Whipple Morrison.....	87 Main Street.....	5
TILTON.		
Frank R. French.....	Main Street.....	5
Charles P. Herrick.....	Main and Bridge Streets.....	5
Henry L. Jordan.....	Hotel, 17 and 19 Main Street.....	1
Robert J. Young.....	Pleasant Street.....	2
Charles P. Herrick.....	Main and Bridge Streets.....	3
George W. Lord.....	Main Street.....	5
George W. Lord.....	Main Street.....	3
Burke & Boucher.....	Tilton Court.....	2

BELKNAP AND CARROLL COUNTIES.

Name of Licensee.	Street and Number.	Class.
LAKE WINNIPESAUKEE.		
Harry L. Wentworth (a).....	Steamer Mount Washington.....	6

(a) License exercised upon the waters of Lake Winnepesaukee in the Counties of Belknap and Carroll.

LIST OF LICENSES GRANTED

From May 1, 1904, to December 31, 1904, inclusive.

(License year, 1904-1905.)

CARROLL COUNTY.

Name of Licensee.	Street and Number.	Class.
BARTLETT.		
The G. W. Armstrong Dining Room and News Company	Maine Central Railroad Station....	6
Edgar A. Stevens.....	Cave Mountain House.....	1
CONWAY.		
Lycurgus Pitman.....	45 Main Street, North Conway.....	5
Willis A. Blood	The Conway House.....	1
Alton M. Shorey	Main Street, Conway Corner	5
Henry H. Randall.....	Hotel Randall, North Conway.....	1
Andrew I. Creamer	Kearsarge Hotel, North Conway..	1
Herbert S. Mudgett.....	The Intervale House, Intervale...	1
JACKSON.		
Marshall C. Wentworth.....	Wentworth Hall and Cottages....	1
OSSIPEE.		
Addie M. Huse	Huse's Hotel ..	1
WAKEFIELD.		
The G. W. Armstrong Dining Room and News Company.....	Railroad Station, Sanbornville....	6
Crosby B. Remick.....	Sanborn House Hotel, Sanbornville	3
Hazen L. Whiting.....	Davis House, East Wakefield.....	1
Hazen L. Whiting.....	Davis House, East Wakefield.....	3
John C. Pike.....	Union Hotel, Union Village.....	1
John C. Pike.....	Union Hotel, Union Village.....	3
Wilbert S. Davis.....	High Street.....	5
Reed A. Lang	Meadow Street, Sanbornville.....	2
Crosby B. Remick	Sanborn House Hotel, Sanbornville	1
WOLFEBOROUGH.		
Frank P. Hobbs.....	Hobbs-is-Inn.....	3
Frank P. Hobbs.....	Hobbs-is-Inn.....	1
N. H. Scott.....	Main Street	5
Joseph W. Robins.....	1 South Main Street.....	5
William E. Wiggin.....	Sheridan House.....	1

LIST OF LICENSES GRANTED

From May 1, 1904, to December 31, 1904, inclusive.

(License Year, 1904-1905.)

CHESHIRE COUNTY.

Name of Licensee.	Street and Number.	Class.
ALSTEAD.		
Herbert B. Chapin.....	Hotel Alstead.....	1
Herbert B. Chapin.....	Hotel Alstead.....	3
CHESTERFIELD.		
John Corkery.....	Spofford House, Spofford Village.	3
John Corkery.....	Spofford House, Spofford Village.	1
James H. Stearns.....	The Pine Grove Springs Hotel....	1
Wallace K. Ware*.....	Lakeside House.....	1
Wallace K. Ware*.....	Lakeside House.....	3
John W. York.....	Silverdale Hotel.....	1
HARRISVILLE.		
William J. Halpin.....	Main Street.....	2
Ernest White.....	Main Street.....	2
Charles A. Blake.....	Nubaunsit House.....	3
Charles A. Blake.....	Nubaunsit House.....	1
HINSDALE.		
William J. Curran.....	Main Street and Fitzgerald Ave...	2
Holland & Ferrin.....	Hotel Ashuelot.....	3
Charles K. Raynsford.....	31 Main Street.....	5
Holland & Ferrin.....	Hotel Ashuelot.....	1
F. C. Gale & Co.....	The Island.....	3
F. C. Gale & Co.....	The Island.....	2
Edwin S. McField.....	Main Street, Stebbin's Block.....	5
KEENE.		
John J. O'Neill.....	31 Church Street.....	2
Richard M. Barry.....	18 Railroad Street.....	2
Richard M. Barry.....	18 Railroad Street.....	3
Bert W. Hodgkins*.....	39 Central Square.....	5
W. N. Prescott.....	4 Central Square.....	5
Charles Gale Shedd.....	37 Central Square.....	5
Ben O. Aldrich.....	15 Central Square.....	5
John T. Armstrong.....	19 Roxbury Street.....	2
N. G. Gurnsey & Co.....	North side Dunbar Street.....	3
Judson A. Reynolds.....	Cheshire House.....	1
N. G. Gurnsey & Co.....	72 Main Street.....	2
Duffy & Donovan*.....	40 Church Street.....	2
Putney & Buckminster.....	Eagle Hotel.....	1
Ferdinand Petts.....	21 Church Street.....	2
Cornelius E. Sullivan.....	Commercial Street.....	2
George L. Hitchcock.....	18 Main Street.....	5
J. Fortier & Co.....	Hotel Fortier.....	1
Leon E. Sebastian.....	13 Roxbury Street.....	2
Martin H. Sullivan.....	Commercial, rear No. 2 Wilson St.	2
Charles F. Leonard.....	Hotel Ellis.....	1

CHESHIRE COUNTY.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
SWANZEY.		
Alfred L. Putney.....	Central House.....	1
Sydney Harrocks.....	Elm House, Swanzey Factory.....	1
Cantlin & Bigelow.....	West Swanzey House, W. Swanzey	1
WALPOLE.		
Michael H. Murphy.....	Riverside Hotel, No. Walpole.....	3
Daniel W. Riley.....	62 Main Street, No. Walpole.....	2
Patrick A. Killeen.....	Walpole House, No. Walpole.....	3
John H. Flavin*.....	29 River Street, No. Walpole.....	2
Patrick A. Killeen†.....	Walpole House, No. Walpole.....	1
Michael H. Murphy†.....	Riverside Hotel, No. Walpole.....	1
Denis Brennan.....	1 Vine Street, No. Walpole.....	2
Denis Brennan.....	Rear 18 & 20 Centre St., N. Walpole	3
Patrick Bowen.....	21 River Street, No. Walpole.....	2
Isaac Ledger*.....	Near toll bridge.....	3
Charles C. Davis.....	Main and Westminster Streets...	5
L. J. Vetterman Brewing Co.....	On Walpole Road.....	8
George E. Sherman.....	The Dinsmore.....	3
George E. Sherman.....	The Dinsmore.....	1
Thomas H. Donegan.....	15 Main Street, No. Walpole.....	2
Edward H. McNamara.....	15 Vine Street, No. Walpole.....	2
Mathew E. Murphy.....	21 Center Street, No. Walpole.....	5
Mathew E. Murphy.....	21 Center Street, No. Walpole.....	3
WINCHESTER.		
Albert H. Watkins.....	Hotel, Richmond Street.....	1
Albert H. Watkins.....	Winchester House.....	3
Walter E. Ward.....	Ward's Inn.....	1
Walter E. Ward.....	Ward's Inn.....	3
Julius E. Powers.....	Main and Elm Streets.....	3
Austin N. Kingsley.....	Kingsley House, Ashuelot.....	1
Austin N. Kingsley.....	Kingsley House, Ashuelot.....	3

LIST OF LICENSES GRANTED

From May 1, 1904, to December 31, 1904, inclusive.

(License Year 1904-1905.)

COOS COUNTY.

Name of Licensee.	Street and Number.	Class.
BERLIN.		
Waldo Babson.....	Main and Mason Streets.....	5
John D. Lary*.....	15 Green Street.....	3
Louis J. Cote.....	11½ Green Street... ..	5
Alfred E. Buckley†.....	5 Mechanic Street.....	2
Frank E. Farwell.....	Berlin House.....	1
Charles F. Jolbert.....	9 Green Street.....	2
Foss T. McNally.....	Revere House.....	1
Napoleon Rouleau.....	49 Main Street.	2
Theodore Morin.....	8 Mason Street.....	2
Morin & Bouchard†.....	Main Street, Little Gagnon Block.	1
Morin & Bouchard.....	Main Street, Little Gagnon Block.	3
Patrick J. Pickford.....	Mechanic Street.....	2
Michael Burke & Co.....	Main Street.....	2
Albert Croteau.....	137 Main Street.....	2
Cyril Brooks.....	Main Street, east side.....	2
Vallieres & Co.†.....	Commercial House.....	1
Louis J. Cote.....	Main Street.....	5
Emma Barney Holland.....	Central House.....	1
Hogan & Lapage.....	Main Street.....	2
George A. St. Germain.....	Sheridan House.....	1
George A. St. Germain.....	Sheridan House Block.....	3
Albert Croteau.....	Hotel Albert.....	3
Albert Croteau.....	Hotel Albert.....	1
Toussaint & Guay.....	99 Main Street.....	2
Sutton & Berube*.....	52 Main Street.....	2
Earl H. Lyford.....	20 Main Street.....	5
Henry G. Smith*.....	72 Main Street.....	2
Miles J. Mullen.....	11 Main Street.....	5
John Sheridan*.....	98 Main Street.....	2
William G. Dupont*.....	Between 62 and 64 Main Street....	2
Martin & Stewart.....	87 Main Street.....	2
Archille Lessard*.....	6 Mason Street.....	2
Louis J. Cote.....	Main Street, Berlin Mills Village..	5
City Bottling Co.....	Rear 16 Mechanic Street.....	3
Thomas H. Sheridan.....	Mechanic and Pleasant Streets....	2
Henry G. Smith.....	Commercial House.....	1
Clarence A. Twitchell.....	17 Mechanic Street.....	2
CARROLL.		
Richard J. Quinn.....	Twin Mountain.....	3
Harley E. Jenness.....	Twin Mountain.....	3
Alfred M. Allen.....	Near Bretton Woods Station.....	3
The Barron, Merrill & Barron Co.*.	Fabyan House Cottage.....	1
The Barron, Merrill & Barron Co.*.	Fabyan House Cottage.....	3
The Mount Pleasant Hotel Co.....	The Mount Washington, Bretton	1
The Mount Pleasant Hotel Co.....	Mount Pleasant Hotel.... [Woods	1
The Barron, Merrill & Barron Co...	Twin Mountain House.....	1
The Barron, Merrill & Barron Co...	Crawford House.....	1

COOS COUNTY.—*Continued.*

Name of Licensee.	Street and Number.	Class.
COLEBROOK.		
Charles E. Hartshorn.....	New Colebrook House.....	1
Charles S. Aldrich*.....	Fred G. Vancose Building.....	5
T. G. Rowan and Ellen L. Rowan...	Monadnock House.....	1
ERROL.		
Nathaniel R. Leach.....	Umbagog House.....	1
GORHAM.		
William D. Morse.....	Androscoggin Street.....	2
Fred W. Noyes.....	Exchange and Railroad Streets...	5
Ensign H. Barrett.....	68 and 70 Main Street.....	5
Charles A. Chandler.....	Mt. Madison Hotel.....	1
Charles A. Chandler.....	Androscoggin Street.....	2
John Gauthier.....	9 Washington Street.....	2
Stephen J. Maloney.....	Mount View Hotel.....	1
JEFFERSON.		
Chester A. Bates.....	Main Street.....	5
Jefferson Hotel and Land Co.....	Waumbek and Cottages.....	1
LANCASTER.		
James L. Dow.....	51 Main Street.....	5
Frank B. Lewis.....	Main Street.....	5
Guy W. Gaymond,†.....	The Lancaster House.....	1
MILAN.		
James R. Jordan.....	Hotel Milan.....	3
James R. Jordan.....	Hotel Milan.....	1
Orvis A. Twitchell.....	In drug store.....	5
Almon A. Trafton.....	Ammonoosuc House.....	1
Almon A. Trafton.....	Ammonoosuc House.....	3
NORTHUMBERLAND.		
Willard C. Carpenter.....	Main Street, Groveton.....	5
Harvey S. Goodwin and Lillian A. Goodwin.....	Groveton Tavern, Groveton.....	3
Harvey S. Goodwin and Lillian A. Goodwin.....	Groveton Tavern, Groveton.....	1
John M. Wilson.....	18 Main Street, Groveton.....	5
Charles E. Bellows.....	Main Street, Groveton.....	2
Lizzie McConnell.....	Union House, Groveton.....	1
Eagle Hotel Co.....	Eagle Hotel, Groveton.....	1
Eagle Hotel Co.....	Eagle Hotel, Groveton.....	3
E. E. Tibbetts.....	Melcher House, Groveton.....	1
E. E. Tibbetts.....	Melcher House, Groveton.....	3
Xavier Turcotte.....	Toohe's Block, Groveton.....	2
Lizzie McConnell.....	Union House, Groveton.....	3
SARGENT'S PURCHASE.		
The Barron, Merrill & Barron Co..	Sumit House, Mt. Washington.....	1

COOS COUNTY.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
STEWARTSTOWN.		
Brooks & Brown.....	Riverside House.....	1
Brooks & Brown.....	Riverside House.....	3
Francis Blais*.....	Main Street, West Stewartstown..	2
Hugh A. McKinnon.	Main Street, West Stewartstown..	5
George N. Pike.....	Hotel Pike, West Stewartstown...	1
George N. Pike.....	Hotel Pike, West Stewartstown...	3
STRATFORD.		
John C. Hutchins.....	Drug Store, North Stratford.....	5
Edward Daley.....	Daley House, North Stratford.....	1
T. C. Atkinson.....	Hotel Atkinson, North Stratford..	1
WHITEFIELD.		
Henry M. Leonard.	Union Street.....	2
Richmond P. Lindsey.....	Fiske House.....	1
Richmond P. Lindsey.....	Fiske House.....	3
William F. Aldrich.....	Union Street.....	2
Lyman O. Shurtleff.	Main Street.....	3
Lyman O. Shurtleff.....	Main Street.....	5
Willard C. Leonard.....	Main Street.....	3
Willard C. Leonard.....	Main Street.....	3
Harvey G. Lapier.....	Cottage Hotel.....	1

LIST OF LICENSES GRANTED

From May 1, 1904, to December 31, 1904, inclusive.

(License year, 1904-1905.)

GRAFTON COUNTY.

Name of Licensee.	Street and Number.	Class.
ASHLAND.		
Albert E. Porter	Main Street.....	5
James Brogan*.....	Thompson House.....	1
James Brogan*.....	Thompson House.....	3
Wilfred F. Brown.....	Main Street.....	5
Wilfred F. Brown.....	Main Street.....	3
James M. Cotton.....	Squam Lake House.....	1
James M. Cotton.....	Squam Lake House.....	3
BENTON.		
L. H. Parker.....	Parker House.....	1
BETHLEHEM.		
Henry P. Smith.....	Main Street.....	5
The Maplewood Hotel Co.....	Maplewood Hotel.....	1
Durgin & Co.....	The Sinclair.....	1
BRISTOL.		
George H. Fowler.....	Central Square.....	5
Charles H. Prescott.....	Hotel Bristol.....	1
CAMPTON.		
Jonathan C. Peaslee	Main Street, Campton Village.....	5
CANAAN.		
Edwin M. Allen	Mechanic Street.....	5
Oscar L. Rand.....	Hotel Rand.....	1
Cyrus A. Kimball.....	Cardigan House.....	1
ENFIELD.		
Schmidt & Dempsey.	Currier & Carlton's Block.....	2
William E. Larkin.....	Main Street.....	5
Cole & Lawton.....	Mechanic Street.....	2
Albie L. Moody.....	Hotel Rollins.....	1
Harry E. Sargent.....	Hotel, head Mascoma Lake.....	1
FRANCONIA.		
The Profile & Flume Hotels Co... |	Profile House.....	1
HAVERHILL.		
W. F. Wormwood.....	Hotel Wentworth, Woodsville....	1
Ezra B. Mann	Opera House Block, Woodsville..	5
L. E. Collins.....	Weeks' Block, Woodsville.....	3
George H. Clark.....	Central Street, Woodsville.....	5
O. D. Johnson & Co.....	Hotel Johnson, Woodsville.....	1

GRAFTON COUNTY.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
LEBANON.		
Peter S. Lemay	40 Hanover St., Lebanon Center...	4
I. N. Perley.....	15 Hanover Street.....	5
Joseph E. Lynch.....	Cottage Hotel, West Lebanon....	1
Joseph Coutremarsh.....	Mascoma House.....	1
William E. Mudgett.....	Williamson House.....	1
Twombly & Co.†.....	16 Court Street.....	3
Harry E. Sargent.....	Sargent's Hotel, West Lebanon...	3
Harry E. Sargent.....	Sargent's Hotel, West Lebanon...	1
Joseph E. Lynch.....	Cottage Hotel, West Lebanon....	3
McDonnell & Jenks.....	Main Street, West Lebanon.....	3
Albert W. Sternbloom.....	Main Street, West Lebanon.....	5
Michael Daily.....	16 Court Street.....	3
LINCOLN.		
Timothy McGoldrick.....	Pollard Road	3
Timothy McGoldrick.....	Pollard Road	4
LISBON.		
Harold C. Marston.....	School Street.....	5
Fred W. Bangs.....	Main Street	5
Featherstone & Moulton.....	Hotel Moulton	1
Robert P. Peckett	Franconia Inn.....	1
LITTLETON.		
Charles F. Davis.....	12 Main Street.....	5
Fred E. Green.....	102 Main Street.....	5
Wilbur F. Robbins.....	28 Main Street.....	5
PLYMOUTH.		
Josiah R. Elliott.....	Pemigewasset House.....	1
Josiah R. Elliott.....	Pemigewasset House	3
Josiah R. Elliott.....	Railroad Restaurant.....	6
Ward B. Hutchins.....	The Tyler House.....	1
Bert P. Porter.....	96 North Main Street.....	5
Fred W. Brown.....	Main Street.....	5
Bert P. Porter.....	96 North Main Street.....	3
George N. Morse.....	1 Highland Street.....	3
George N. Morse.....	1 Highland Street.....	5
Ward B. Hutchins.....	Tyler House.....	3
WARREN.		
George H. L. Head	Moosilauke House.....	1
WOODSTOCK.		
William R. Beard.....	Main Street, North Woodstock....	3
Ernest L. Putnam.....	Main Street, North Woodstock....	5
Gideon Rude.....	Hotel Fairfield, North Woodstock	1
Gideon Rude.....	Hotel Fairfield, North Woodstock	3

LIST OF LICENSES GRANTED

From May 1, 1904, to December 31, 1904, inclusive.

(License Year 1904-1905.)

HILLSBOROUGH COUNTY.

Name of Licensee.	Street and Number.	Class.
ANTRIM.		
William F. Dickey.....	Main Street.....	5
GOFFSTOWN.		
Ernest J. McCrillis	Mast Street.....	5
Otis F. Sumner.....	Mast Street.....	5
GREENVILLE.		
Charles E. Hall.....	Main Street.....	5
Charles E. Sawyer.....	Columbian House.....	1
Eugene J. Boisvert.....	Mill Street.....	2
Louis P. Dupont.....	Main Street.....	2
Louis Boutin.....	Central House.....	1
Louis Boutin.....	Central House.....	3
HANCOCK.		
Almus F. Woodward.....	Forest House.....	1
HILLSBOROUGH.		
Charles S. Perry.....	School & Main, Hillsborough Br....	5
Natt Head.....	Whittemore Blk., Hillsborough Br.	5
Thomas Gray & Co.....	Valley Hotel, Hillsborough Bridge	3
Thomas Gray & Co.....	Valley Hotel, Hillsborough Bridge	1
W. E. Proctor & Co.....	Whittemore Blk., Hillsborough Br.	2
MANCHESTER.		
Edward W. Harrington.....	109 and 115 Nutfield Lane.....	2
Weber & Grossman.....	185 Second Street.....	2
Herbert E. Dunnington.....	780 and 782 Elm Street.....	5
Marshall & Knowlton.....	217 Lowell Street.....	5
Hohman & Bartlett.....	672 Elm Street.....	3
Marshall & Knowlton.....	744 Elm Street.....	5
John J. Holland.....	893 Elm Street.....	5
Harugari Club.....	232-238 Douglas Street.....	7
Owen Kenney, 2d.....	72 Lake Avenue.....	2
Daniel A. Shanahan.....	38 Lake Avenue.....	2
Matthew J. Dollard.....	15 West Merrimack Street.....	2
George W. O. Tebbetts.....	786 Elm Street.....	5
Charles G. Dunnington.....	375 Massabesic Street.....	5
Lewis G. Gilman.....	Lake Avenue and Hall Street.....	5
George Hosser.....	32 Manchester Street.....	3
Robert Schneider.....	44 Ferry Street.....	4
Robert Schneider.....	44 Ferry Street.....	3
William White.....	20 Amory Street.....	2
William White.....	20 Amory Street.....	3
Fred H. Thurston.....	879 Elm Street.....	5
Amasa D. Smith.....	142 Merrimack Street.....	5
George F. Soule.....	150 Bridge Street.....	5
Philius Graveline.....	37 Marion Street.....	2
Dowd Bros.....	39 Amherst Street.....	2
Dowd Bros.....	41 Amherst Street.....	3

HILLSBOROUGH COUNTY.—Continued.

Name of Licensee.	Street and Number.	Class.
MANCHESTER.—Continued.		
Manchester Turn Verein and Gym-nastical School.....	265 Turner Street.....	7
Eugene Quirin.....	513 and 517 North Main Street.....	2
Christian L. Wolf.....	48 South Main Street.....	2
Quirin Bros.....	85 Manchester Street.....	2
Quirin Bros.....	89 Manchester Street.....	3
Oscar L. Giguere.....	1023 Elm Street.....	5
Thomas Lapointe.....	95 Manchester Street.....	2
Norman H. Colby.....	267 Bridge Street.....	5
Dante Smith.....	1277 Elm Street.....	5
Orrin W. Martin.....	20 Manchester Street.....	2
Murphy & Flynn.....	32 Lake Avenue.....	2
Joseph P. Chatel*.....	69 Manchester Street.....	2
Joseph P. Chatel*.....	61 and 63 Manchester Street.....	3
Buch & Anderson.....	54 South Main Street.....	2
Michael Connor.....	569 Elm Street.....	2
Michael Connor.....	573 Elm Street.....	3
Michael J. Connor, Jr.....	21 Central Street.....	2
Conrad Fiege.....	163 Douglas Street.....	2
Patrick J. Flaherty.....	41 Central Street.....	2
Gesang Verein Maennerchor.....	205 South Main Street.....	7
Patrick J. Flaherty.....	45 Central Street.....	3
Grenier & Chandonnet.....	28 Concord Street.....	2
Reinhardt Hecker.....	197 Douglas Street.....	2
Alonzo W. Glines.....	200 Hampshire Lane.....	2
Alonzo W. Glines.....	200 Hampshire Lane.....	3
Archie F. Precourt.....	170 Wilson Street.....	5
Albert J. Precourt.....	93 Central Street.....	5
Wagner & Graupner.....	734 Elm Street.....	2
Joseph Dugre.....	617 Elm Street.....	2
Joseph Bienvenue.....	47 Amherst Street.....	2
Glancy & Eaton.....	542 Elm Street.....	2
Gottlieb Graf.....	26 Marion Street.....	2
James J. Kerwin.....	Lake Avenue and Chestnut Street.....	5
Patrick Kearns.....	409 North Main Street.....	3
Patrick Kearns.....	413 North Main Street.....	2
J. Albert Marshall.....	24 South Main Street.....	5
Sabin Nowry.....	Wayne and North Main Streets.....	5
Herman Rodelsperger.....	29 South Main Street.....	2
Yeatter & Van Dyke.....	20 Concord Street.....	2
James H. Reynolds.....	18 Amherst and 157 Nutfield Lane.....	2
Yeatter & Van Dyke.....	24 Concord Street.....	3
Frank E. Ingalls.....	58 South Main Street.....	5
Alexander Ferson.....	34 and 36 Amherst Street.....	2
Frank B. Parrett.....	106 McGregor Street.....	2
Gustave L. DeMartigny.....	685 Elm Street.....	5
Jeremiah J. McCarthy.....	46 Granite Street.....	2
Arthur Provost.....	36 Amory Street.....	2
John E. Piller.....	124 School Street.....	2
Nathaniel F. Perkins.....	13 Concord Street.....	2
Walter B. Mitchell.....	344 Granite Street.....	5
Walter A. Chipman.....	797 Elm Street.....	5
Laurent Roy.....	51 Manchester Street.....	2
Charles P. Connor.....	621 Elm Street.....	2
Bruno & Ferretti*.....	639 Elm Street.....	2
Joseph St. Yves.....	15 Lake Avenue.....	2
John T. Kearns.....	405 North Main Street.....	2
Patrick Harrington.....	17 Lake Avenue.....	3
Patrick Harrington.....	21 Lake Avenue.....	2
Joseph Masse.....	16 Concord Street.....	2
Laforce & Barron.....	55 Amherst Street.....	2
Francis C. Miville.....	535 North Main Street.....	5
Mahoney & Tierney.....	71 Lake Avenue.....	2
Michael F. Lawlor.....	51 Nutfield Lane.....	2

HILLSBOROUGH COUNTY.—Continued.

Name of Licensee.	Street and Number.	Class.
MANCHESTER.—Concluded.		
Melvin K. McLaughlin.....	69 Massabesic Street.....	5
John B. Varick Co.....	809, 811 and 813 Elm Street.....	5
Herman G. Poehlman.....	138 Lake Avenue.....	5
Fred C. Porter.....	1133 Elm Street.....	5
Thomas H. Mahoney.....	81 Central Street.....	2
Club Jolliet.....	490 Chestnut Street.....	7
Frank A. James.....	1213 Elm Street.....	5
Joseph F. Dignam.....	1212-1214 Elm Street.....	5
Charles M. Hecker.....	104 South Main Street.....	2
Paul H. Boire.....	1029 Elm Street.....	5
Workingmen's Relief Society.....	Douglas and West Streets.....	7
Charles H. Woods.....	1167 Elm Street.....	5
Thomas Lord.....	New Manchester House.....	1
William H. Hurd.....	New City Hotel.....	1
William H. Hurd.....	New City Hotel.....	3
Beethoven Manner Chor.....	48 Blaine Street.....	7
Patrick J. Morrissey.....	Hotel Webster.....	3
Patrick J. Morrissey.....	Hotel Webster.....	1
Selwin B. Wallace.....	Phoenix Hotel.....	1
Zephirin Provencher.....	17 and 19 Bridge Street.....	5
John L. Beaudry.....	1160 Elm Street.....	5
Augustus A. E. Brien.....	971 Elm Street.....	5
Martin E. Sullivan.....	85 Lake Avenue.....	2
Richards & Thornton.....	141-147 Nutfield Lane.....	2
Welcome Jencks & Co.....	12 West Central Street.....	2
Manchester Hardware Co.....	934 and 938 Elm Street.....	5
John F. Burke.....	52 Merrimack Street.....	3
John T. Gillis & Co.....	657 Elm Street.....	2
Bodkin & Hartnett.....	238 Franklin Street.....	2
Quinn & Kearns Co.....	58 and 60 West Central Street.....	2
John A. Ballou*.....	Windsor Hotel.....	1
Cercle National.....	515 North Main Street.....	7
Maurice J. Connor.....	19 South Main Street.....	2
William M. Eames.....	1089 Elm Street.....	5
Francois Godbout.....	79 Manchester Street.....	4
James E. McDonough.....	110 Hanover Street.....	5
Ryan & McGreevy.....	77 Central Street.....	2
True W. Jones Brewing Co.....	Hancock Street.....	8
The Derryfield Club.....	17 Mechanic Street.....	7
Connolly & Teehan.....	13 Granite Street.....	2
Denis F. Cullity.....	552 Elm Street.....	2
The West End Social Club.....	27 Clinton Street.....	7
Z. Foster Campbell.....	955 Elm Street.....	5
James W. Thomson.....	47 Manchester Street.....	2
Moise Potvin.....	2 Amory Street.....	5
Sullivan Bros. & Co.....	83 Amherst Street.....	2
John Hayes.....	15-17 Concord Street.....	2
Union Grocery Co.....	760 Elm Street.....	3
James Kenney.....	26 Lake Avenue.....	2
Thomas J. Foley.....	Old City Hotel.....	1
Clark & Flanagan.....	87 Central Street.....	2
William F. Howe.....	365 Elm Street.....	3
Holland & Harrington.....	65 Central Street.....	2
John J. White.....	562 Elm Street.....	2
Elizabeth M. Hayes.....	33 Central Street.....	2
William G. Mealey*.....	75 Manchester Street.....	2
John F. Burke.....	52 Merrimack Street.....	2
Waldo S. Plastridge*.....	Hotel Milford.....	1
Joseph F. Dignam.....	1231 Elm Street.....	5
Emil Kuehnle.....	163 Second Street.....	4
Red Men's Social Club.....	80 Manchester Street.....	7
Joseph Masse.....	14 Concord Street.....	3
Oscar L. Giguere.....	1023 Elm Street.....	5
Edgar E. Castor.....	1331 Elm Street.....	5

HILLSBOROUGH COUNTY.—Continued.

Name of Licensee.	Street and Number.	Class.
MERRIMACK.		
John W. Phillips.....	The Rockingham, So. Merrimack..	1
Averill & Hart.....	Souhegan Hotel.....	3
Charles H. Longa.....	Merrimack House.....	1
Charles H. Longa.....	Merrimack House.....	3
Averill & Hart.....	Souhegan Hotel.....	1
MILFORD.		
Thomas P. Garrity.....	Union Square (West).....	2
Joseph Gendreau.....	Union Square.....	2
William F. French.....	Union Square.....	5
Thomas G. Holland.....	Union Square.....	2
Fred B. Bartlett*.....	Hotel Howison.....	1
NASHUA.		
The G. W. Armstrong Dining-room and News Co.....	B. & M. R. R. Station, Nashua Jct..	6
Mederic U. Bouthillier.....	41 Pine Street.....	5
Bellavance & O'Neil*.....	2 Canal Street.....	2
August F. L. Perreault.....	101 West Pearl Street.....	5
Bellavance & O'Neil*.....	4 Canal Street.....	3
Joseph Charron.....	32 Chestnut Street.....	2
Gravelle & Palardy.....	11 Ledge Street.....	2
John D. Sullivan.....	28 Factory Street.....	2
John D. Sullivan.....	24 Factory Street.....	3
Hargraves & McGlynn.....	10 School Street.....	3
Hargraves & McGlynn.....	91 West Pearl Street.....	2
Frank H. Wingate.....	129 Main Street.....	5
Collette & Salvail.....	66 Canal Street.....	2
Andre Belanger.....	186½ West Pearl Street.....	2
Philip Belair.....	½ Ledge Street.....	2
Coffey & Gilboly*.....	16 High Street.....	2
John H. Field.....	22 High Street.....	3
B. P. Clancy & Co.....	131 Temple Street.....	2
Willie W. Heath.....	Laton House.....	1
Thomas F. Graham and Frank Bell	Tremont House.....	3
John J. Kenney.....	165 West Pearl Street.....	2
Alfred Laforme.....	76 Canal Street.....	2
Lavoie & Gagne.....	176 West Pearl Street.....	2
George F. Merrifield*.....	22 West Hollis Street.....	2
John Moran.....	2 Scripture Street.....	2
M. H. O'Grady.....	1 and 3 Thayer's Court.....	3
M. H. O'Grady.....	Windsor Hotel.....	1
Dennis O'Neil.....	Hotel, 5 Denton Street.....	1
Daniel O'Connell.....	Nashua Driving Park Hotel.....	1
Herbert E. Rice§.....	239 Main Street.....	5
Joseph Richard*.....	159 West Pearl Street.....	2
Winn & Lee.....	12 West Hollis Street.....	2
Edward D. Woodward†.....	Hotel, 80 Canal Street.....	1
John J. Welch.....	125 Temple Street.....	2
Alphonse Burque.....	52 Walnut Street.....	2
N. Lajoie & Co.....	68 Canal Street.....	2
Nelson S. Whitman.....	175 Main Street.....	5
A. J. Blood & Co.....	102 West Pearl Street.....	3
Ernest F. Tessier.....	110 Pearl Street.....	3
William Corosa.....	9 School Street.....	2
John A. Wolcott.....	22 Factory Street.....	2
Victor Lussier.....	83 West Pearl Street.....	5
Graham & Bell.....	Hotel, 191 Main Street.....	1
Darila Cardin.....	1 Commercial Street.....	2
James B. Hallisey.....	28 West Hollis Street.....	2
Patrick Lonergan.....	43 School Street.....	2
Gate City Wine Co.*.....	8 and 10 Factory Street.....	2

HILLSBOROUGH COUNTY.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
NASHUA.— <i>Concluded.</i>		
John B. Terrien.....	Montreal House.....	1
Nashua Wine and Cider Co.....	Railroad Square.....	3
Joseph Paul.....	56 Canal Street.....	2
Joseph Labine.....	20 Ledge Street.....	2
Joseph Labine.....	20 Ledge Street.....	3
Henry M. Burns & Co.....	50 Factory Street.....	2
Joseph Charpentier.....	66½ West Hollis Street.....	2
Burke & Gazette.....	99 West Pearl Street.....	2
Prosper H. Charpentier.....	28 Chestnut Street.....	2
Charles H. Chagnon.....	City Hotel.....	1
Charles R. Delorey.....	77 West Pearl Street.....	2
Joseph Kashulines.....	7½ School Street.....	2
William T. O'Grady.....	153 West Pearl Street.....	2
Joseph T. Slattery.....	9 High Street.....	2
Sullivan & Sullivan.....	6 High Street.....	2
Sullivan & Sullivan.....	6 High Street.....	3
Charles E. Wright.....	Phenix Hotel.....	1
Austin E. Wallace.....	73 Main Street.....	5
John J. Flood.....	136 East Hollis Street.....	3
Patrick H. Dolan.....	15 Harbor Avenue.....	3
Isaiah Robbins, Jr.....	Main & Water Streets.....	2
Arthur St. Onge.....	34 Chestnut Street.....	5
Blanchard & Currier.....	55 Main Street.....	5
Frank Simmons.....	239 Main Street.....	5
Herbert E. Rice.....	169 Main Street.....	5
Louis Poulin.....	28 Ledge Street.....	2
Sarah Connery.....	Hotel, 36 Bridge Street.....	1
Louis E. LaRose.....	60½ Kinsley Street.....	5
Cyrille M. Salvail.....	40½ Canal Street.....	2
Michael Purcell.....	20 West Hollis Street.....	2
M. H. O'Grady.....	153 West Pearl Street.....	2
Alfred Laforme.....	76 Canal Street.....	3
Albert H. Seifert.....	68 West Hollis Street.....	5
NEW BOSTON.		
William P. Averill.....	The Tavern.....	3
William P. Averill.....	The Tavern.....	1
Frank A. Greer.....	Road New Boston to Bedford.....	5
NEW IPSWICH.		
Joseph Silver, Jr.....	Clark's Hotel.....	1
PETERBOROUGH.		
George L. Forbush.....	Main Street.....	5
Charles C. Blomquest.....	Main and Grove Streets.....	5
George Samuel Tucker.....	Tucker's Tavern.....	1
WILTON.		
William I. Durgin.....	Main Street.....	5
Starr B. Center.....	The Everett.....	3
Michael P. Stanton.....	Main Street.....	2
Michael P. Stanton.....	Main Street.....	3
Starr B. Center.....	The Everett.....	1
Alfred Duval.....	Main Street.....	2
Eugene F. Kennedy.....	Main Street.....	2
James J. Shea.....	Main Street.....	2

LIST OF LICENSES GRANTED

From May 1, 1904, to December 31, 1904, inclusive.

(License year, 1904-1905.)

MERRIMACK COUNTY.

Name of Licensee.	Street and Number.	Class.
ALLENSTOWN.		
Edmond Blanchette.....	17 Hayes' Opera House Block....	2
Alfred W. Gilbert.....	Ferry Street.....	2
Joseph Freser.....	Ferry Street.....	2
James E. Welch.....	11 Main Street.....	2
Joseph E. Lamiette*.....	Main and Depot Streets.....	2
Uiric Daneault.....	Ferry Street.....	2
ANDOVER.		
Jennie Hopkins.....	| Hotel Potter, Potter Place.....	1
CONCORD.		
Jacob Bros.....	1 Depot Street.....	2
Herbert S. Sanborn.....	5 Depot Street.....	5
William H. Dunlap.....	99 North Main Sreet.....	5
James H. Dolan.....	Eagle Hotel.....	1
Walter E. Davis.....	81 North Main Street.....	5
Thomas H. Winslow.....	15 South Main Street, Penacook...	5
J. H. Cauley & Co.....	14 Pleasant Street.....	2
H. Diversi & Co.....	3 Pleasant Street Extension.....	2
A. Perley Fitch.....	24 North Main Street.....	5
Otis N. Davis.....	State and Warren Streets.....	5
John Ahern.....	9 Center Street.....	2
John Ahern.....	9 Center Street.....	3
George H. Richardson.....	135 South Main Street.....	5
Martin Foy.....	4 Pleasant Street Extension.....	2
Edgar A. Newell.....	American House Avenue.....	3
James Kelly.....	35 South Main Street, Penacook...	2
Eugene Sullivan.....	1 North Main Street.....	5
Daniel C. Woodman.....	11 North Main Street.....	5
James W. Welsh & Co.....	5 Columbian Avenue.....	2
Concord Liquor Co.....	Rear 45 North Main Street.....	2
Sweet & Knapp.....	24 East Canal Street, Penacook...	2
Welch & Sullivan.....	3 Durgin's Lane.....	3
Welch & Sullivan.....	7 Durgin's Lane.....	2
Matson Bros.....	Commercial House.....	1
Collins Bros.....	Rear 82 North Main Street.....	2
James M. Collins.....	1 Odd Fellows' Avenue.....	2
James M. Collins.....	5 Odd Fellows' Avenue.....	3
Charles P. Coakley.....	Washington House, Penacook.....	1
Harry P. Bowers.....	Rear 9 North Main Street.....	2
George A. Berry.....	16 North Main Street.....	5
Arthur H. Knowlton.....	34 Pleasant Street.....	5
Rumford Bottling Works.....	Rear 71 South Main Street.....	3
A. Perley Fitch.....	24 and 26 North Main Street.....	3
Elmer C. Atwood.....	31 South Main Street, Penacook...	5
L. E. Currier & Co.....	7 Depot Street.....	2
Mary Brogini.....	American House.....	1
Dolan Brothers.....	Rear 127 North Main Street.....	2
Charles E. Silver, Jr.....	51 South Main Street.....	5
Smith Brothers.....	8 Pleasant Street Extension.....	2
Bert M. Weeks.....	40 South Main Street, Penacook...	5
Lewis D. Nevers.....	Central House, Penacook.....	1

MERRIMACK COUNTY.—Continued.

Name of Licensee.	Street and Number.	Class.
CONCORD.—Concluded.		
Edward G. Brown.....	Hotel Lenox.....	1
Arthur E. Clarke.....	132 North Main Street.....	5
Charles P. Coakley.....	Washington House, Penacook.....	3
Ahern & Sweeney*.....	2 Pleasant Street Extension.....	2
Patrick A. S. Sweeney\$.....	165 North Main Street.....	5
J. Irving Hoyt.....	172 North State Street.....	5
Sweet & Knapp.....	24 East Canal Street, Penacook.....	3
Timothy J. Sullivan & Co*.....	South side Warren, near Main.....	2
William P. Underhill.....	165 North Main Street.....	5
John W. Flynn.....	19 Main Street, Penacook.....	2
FRANKLIN.		
Edward L. Nelson.....	18 North Main Street.....	5
William O' Kane.....	5 Canal Street.....	2
Charles L. Eddy.....	393 Central Street.....	5
Warren E. Gregory.....	436 Central Street.....	5
George R. Kempl.....	334 Central Street.....	5
William Rayner.....	28 Canal Street.....	2
Charles H. Bean.....	35 Canal Street.....	2
Charles H. Bean.....	35 Canal Street.....	3
Ira S. Jackman.....	354 Central Street.....	5
Frank A. Gilman.....	Young's Hotel.....	1
Warren E. Gregory.....	436 Central Street.....	3
Patrick L. Kennedy.....	Kennedy Hotel.....	1
Rodney A. Griffin.....	24 Franklin Street.....	5
R. H. Eastman.....	The Odell.....	1
HENNIKER.		
Walter N. Whitney.....	Proctor Square.....	5
George L. Gleason.....	Hotel Henniker.....	1
HOOKSETT.		
William Arel.....	Main Street.....	2
James M. Pearson.....	Ayer House.....	1
James M. Pearson.....	Ayer House.....	3
Alfred Lafond.....	Road Hooksett to Suncook.....	2
Edward T. Thibault.....	Road Main Street to Turnpike.....	2
Eugene Leveille.....	Hunt Hill Road.....	2
HOPKINTON.		
Edward R. Guerin.....	Perkins Inn.....	1
Frank H. Reed.....	Mill Street.....	5
Henry Rolfe, Jr.....	Highland House, Contocook.....	1
NEWBURY.		
William F. Small.....	Maplewood Hotel.....	1
Frank W. Huntoon.....	Forest House, Blodgett's Landing.....	1
PEMBROKE.		
Rainville & Diamond.....	Glass Street.....	2
George E. Gordon.....	Main Street.....	5
Alice Maguire.....	Front Street.....	2
Park H. Kelley.....	Otterson's Block.....	5
Joseph Sanstere.....	Glass Street.....	2
Joseph Sanstere.....	Glass Street.....	3
William J. Welch.....	Front and High Streets.....	2
Timothy J. Lynch.....	Front Street.....	3
Timothy J. Lynch.....	Front Street.....	2

MERRIMACK COUNTY.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
PEMBROKE.— <i>Concluded.</i>		
James Gilbert.....	Glass and Church Streets.....	2
George S. Palmer.....	Main Street.....	5
Joseph Felix.....	Hotel, Main and Union Streets....	1
Charles Boucher.....	Glass Street.....	2
PITTSFIELD.		
John Walsh.....	5 Depot Street.....	2
John Walsh.....	5 Depot Street.....	3
George D. S. Noyes.....	Depot Street.....	5
Henry F. Leavitt.....	13 Depot Street.....	2
George M. Leavitt.....	10 Depot Street.....	3
George M. Leavitt.....	10 Depot Street.....	2
George Oshier.....	Water Street.....	2
William H. Brown.....	Main and Elm Streets.....	5
Luman D. Marston.....	Washington House.....	3
Luman D. Marston.....	Washington House.....	1
WARNER.		
Albert C. Royder.....	Main and Depot Streets.....	5

LIST OF LICENSES GRANTED

From May 1, 1904, to December 31, 1904, inclusive.

(License Year, 1904-1905.)

ROCKINGHAM COUNTY.

Name of Licensee.	Street and Number.	Class.
DEERFIELD.		
George Page.....	Exchange Hotel.....	3
George Page.....	Exchange Hotel.....	1
DERRY.		
Charles A. Piper.....	Hotel Fenton Annex, West Derry.	3
Samuel Howard Bell	12 East Broadway, West Derry....	5
Blake & Drummey	38 West Broadway, West Derry....	2
Ralph Thyng.....	Hotel Bradford, West Derry.....	1
Ralph Thyng.....	Hotel Bradford, West Derry.....	3
Robert S. Elkins.....	Abbott's Court, West Derry.....	3
Lawrence L. Morse.....	40 West Broadway, West Derry....	2
Harry L. Benson.....	4 West Broadway, West Derry....	5
Charles A. Piper.....	Hotel Fenton, West Derry.....	1
George E. Whittaker.....	Beaver Lake House.....	1
EPPING.		
Moses A. Perkins	Perkins Hotel.....	1
Horace W. Langley.....	Main Street.....	2
George A. Gilmore	Main Street.....	5
Bernard Bergeron.....	Road Brentwood to Epping.....	2
EXETER.		
Weeks & Seward	171 Water Street	5
Clarence M. Collins.....	91 Water Street	5
Albert S. Wetherell.....	105 Water Street	5
Albert S. Wetherell.....	Front Street.....	5
Nelson S. Willey.....	Squamscott Hotel.....	1
John H. Gilmore.....	147 Water Street	5
HAMPTON.		
George E. Felch, Jr.*.....	Hampton Beach.....	2
John G. Cutler	Cutler's Sea View House.....	1
John G. Cutler.....	Cutler's Sea View House.....	3
Melzar W. Dunbar.....	Franklin House.....	3
Otis H. Whittier.....	Hotel Whittier.....	1
Otis H. Whittier.....	Hotel Whittier.....	3
Melzar W. Dunbar.....	Franklin House.....	1
David O. Leavitt.....	Main and High Streets.....	5
David O. Leavitt.....	Main and High Streets.....	3
The New Hampshire Automobile Club.....	The N. H. Auto. Club House.....	7
George W. Munsey.....	Hampton Inn.....	1
Eli G. Bunker.....	Newmarket Inn.....	1
Joseph E. Knight.....	21 Ocean Avenue.....	5

ROCKINGHAM COUNTY.—Continued.

Name of Licensee.	Street and Number.	Class.
KINGSTON.		
Amos R. Ingham†.....	Kingston House, Kingston Plains.	1
Amos R. Ingham†.....	Kingston House, Kingston Plains.	3
Sanborn & Ledoux†.....	Hotel Lake View, South Kingston.	1
Sanborn & Ledoux†.....	Hotel Lake View, South Kingston.	3
Susan N. Ingham.....	Kingston House, Kingston Plains.	1
Susan N. Ingham.....	Kingston House, Kingston Plains.	3
NEWCASTLE.		
Calvin Page and Justin V. Hans- com, Trustees.....	The Wentworth.....	1
NEWFIELDS.		
Ralph S. Haley.....	Elm House.....	3
John Torrey.....	69 Pleasant Street.....	2
John Torrey.....	Pleasant Street.....	3
Rufus E. Graves.....	R. R. Restaurant, Rockingham Jc.	3
Rufus E. Graves.....	R. R. Restaurant, Rockingham Jc.	6
John A. Connor.....	Rockingham Junction.....	2
William H. Connor.....	Off Main Street.....	3
Ralph S. Haley.....	Elm House.....	1
NEWMARKET.		
Felix Sobozenski.....	Main Street.....	2
Jean Baptiste La Porte.....	22 Central Street.....	2
G'deon Macarty†.....	1 Central Street.....	2
George H. Willey.....	Hotel Willey.....	3
George H. Willey.....	Hotel Willey.....	1
Valentine G. Murphy.....	Newmarket House.....	3
Lewis E. Chase.....	Chase's Hotel.....	3
Patrick Haley.....	14 Main Street.....	2
Valentine G. Murphy.....	Newmarket House.....	1
Lewis E. Chase.....	Chase's Hotel.....	1
Charles H. Mathes.....	Main Street.....	2
Thomas Brannan.....	72 Main Street.....	2
Alvah H. Place.....	31 Main Street.....	5
Rose Delima McCarthy.....	1 Central Street.....	2
NORTHWOOD.		
Edwin Batchelder.....	Tasker House.....	1
NOTTINGHAM.		
Harvey T. Wyman.....	Rockingham House.....	3
Ralph S. Colcord.....	Mountain and Main Roads.....	2
Harvey T. Wyman.....	Rockingham House.....	1
PORTSMOUTH.		
The G. W. Armstrong Dining Room and News Co.....	R. R. Restaurant.....	6
Benjamin Green.....	1 Market Square.....	5
William D. Grace.....	14 Market Square.....	5
Fred B. Coleman.....	61 Congress Street.....	5
Boardman & Norton.....	17 Pleasant Street.....	5
Goodwin E. Philbrick.....	45 Congress Street.....	5
Calvin Page and Justin V. Hans- com, Trustees.....	The Rockingham.....	1
William Ward & Sons.....	93 Market Street.....	3

ROCKINGHAM COUNTY.—*Continued.*

Name of Licensee.	Street and Number.	Class.
PORTSMOUTH.— <i>Concluded.</i>		
Eldredge Brewing Co.....	Cate and Bartlett Streets.....	8
Mitchell & Co.....	11 McDonough Street.....	2
Charles E. Boynton.....	16 Bow Street.....	3
Allen W. Baker.....	1 Water Street.....	2
Harry N. Bullard.....	4 Water Street.....	2
Cottrell & Walsh.....	Haven Hotel.....	1
Patrick J. Flanagan.....	13 Daniel Street.....	2
Alexander Frazier.....	39 Bridge Street.....	2
John H. Galloway.....	6 McDonough Street.....	2
F. E. Henderson & Co.....	118 Islington Street.....	2
Sherman T. Newton.....	Kearsarge Hotel.....	1
Thomas Loughlin.....	90 Market Street.....	2
Alfred B. Racine.....	25 Bridge Street.....	2
Thomas Loughlin.....	98 Islington Street.....	3
Daniel J. Lynch.....	23 Daniel Street.....	2
Ernest Robinson.....	4 Vaughan Street.....	2
George W. Lord.....	44 Congress Street.....	3
Alta Roberts.....	16 Water Street.....	2
Bartholomew Mahoney.....	116 Islington Street.....	2
Anna T. Dixon & Co.....	13 Water Street.....	2
Samuel T. Young.....	Street from Ceres St. to wharves..	2
Harry E. Northup*.....	51 Deer Street.....	2
Hazen S. Cotton.....	Hotel De Witt.....	1
Dennis E. Drislane.....	9 Water Street.....	2
James T. Whitman.....	83 Islington Street.....	2
Jeremiah Kilroe & Co.....	3 Bartlett Street.....	2
Orra J. Gerry.....	84 Market Street.....	2
True W. Priest.....	5 Ladd Street.....	2
W. H. Dunn & Co.....	15 Water Street.....	2
Andrew O. S. Caswell.....	12½ Porter Street.....	3
Charles E. Tilton.....	1 Ladd Street.....	2
Richard Seely.....	38 Deer Street.....	2
Edward Russell.....	24 Water Street.....	2
Percy Rowe.....	8 Vaughan Street.....	2
Fred S. Wendell.....	92 Market Street.....	2
D. J. Carroll & Co.....	34-36 Penhallow Street.....	3
Benjamin Atwell.....	28 Market Street.....	2
D. J. Carroll & Co.....	34-36 Penhallow Street.....	2
Charles Frank Wells.....	56 Market Street.....	2
John Leary.....	90 Islington Street.....	2
Joseph W. Bell.....	1 Fleet Street.....	2
Milton Jonas.....	18 Penhallow Street.....	2
Joseph F. Lamb.....	27 Fleet Street.....	2
Charles W. Ham.....	6 and 6½ High Street.....	2
George E. Weiser.....	Langdon Hotel.....	1
Andrew P. Preston.....	19 Congress Street.....	5
Cornelius J. Leary.....	122 Market Street.....	2
William Chandler.....	23 Fleet Street.....	2
Portsmouth Brewing Co.....	Bow Street.....	8
John H. Barrett*.....	6 Vaughan Street.....	2
C. E. Odiorne Bottling Co.....	26 Bow Street.....	3
Harry A. Titus.....	26 Penhallow Street.....	2
Benjamin F. Mugridge, Jr.....	53 Market Street.....	3
Leslie W. Thompson.....	5 Maplewood Avenue.....	2
John Hallam.....	11 Bartlett Street.....	2
Frank Jones Brewing Co., Limited.	Islington and Albany Streets.....	8
James J. Ryan.....	35 Water Street.....	2
Payne & Walker.....	9 Pleasant Street.....	3
Michael E. Morrissey.....	32 Penhallow Street.....	3
John J. Hill.....	12½ Bow Street.....	2
Hannah McSweeney.....	Commercial Hotel.....	1
Patrick Fay.....	19 Penhallow Street.....	2
Cornelius Regan.....	40 Vaughan Street.....	2

ROCKINGHAM COUNTY.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
RAYMOND.		
Carl J. Whiting.....	Main Street.....	5
RYE.		
Edwin A. Caswell.....	Oceanic Hotel, Isles of Shoals....	1
Frank C. Hall.....	Farragut House.....	1
George G. Lougee.....	Sea View House.....	1
SALEM.		
Wilbert M. Bodge.....	Pavilion, Canobie Lake Park, E. H. & A. Street Ry.....	6
SANDOWN.		
Charles H. Young.....	Triple Elm House.....	3
Joseph G. Norman.....	Worthen Hotel.....	3
Joseph G. Norman.....	Worthen Hotel.....	1
Charles H. Young.....	Triple Elm House.....	1

LIST OF LICENSES GRANTED

From May 1, 1904, to December 31, 1904, inclusive.

(License year, 1904-1905.)

STRAFFORD COUNTY.

Name of Licensee.	Street and Number.	Class.
DOVER.		
Harry G. Davis.....	505 Central Avenue.....	5
Domnick J. Durkin.....	57 Main Street.....	2
John W. Ricker.....	United States Hotel.....	1
Ben A. Hurd.....	6 Orchard Street.....	2
Benjamin F. Kennard.....	503 Central Avenue.....	5
Charles McGowan.....	9 Third Street.....	2
Domnick J. Durkin.....	57 Main Street.....	3
Arthur G. Tufts.....	85 Washington Street.....	5
P. J. McManus & Co.....	341 Central Avenue.....	2
Robinson Bros.....	73 Main Street.....	3
Robinson Bros.....	73 Main Street.....	2
Charles A. Dore & Son.....	Hotel, 48 Third Street.....	1
Frank Cunningham & Co.....	44 Third Street.....	3
McKernan & O'Neil.....	479 Central Avenue.....	2
Samuel Cassells.....	280 Central Avenue.....	2
Patrick Devlin.....	467 Central Avenue.....	2
Patrick Cassily.....	11 Payne Street.....	2
A. T. Pierce & Co.....	American House.....	1
Martin J. McManus & Co.....	473 Central Avenue.....	2
McDonough & McCarty.....	79 Main Street.....	2
Joseph W. Niles.....	561 1/2 Central Avenue.....	2
Edward Sheehy.....	307 Central Avenue.....	2
Edward Durnin.....	31 Main Street.....	2
Alonzo T. Pinkham.....	466 Central Avenue.....	5
Alonzo T. Pinkham.....	208 Central Avenue.....	5
Mallen & Loughlin.....	50 Third Street.....	3
T. E. Varney & Co.....	89 Washington Street.....	5
Varney Bros.....	434 Central Avenue.....	5
Thomas H. McGrail.....	346 Central Avenue.....	5
Patrick Dillon.....	314 Central Avenue.....	2
John E. Kennedy.....	206 Central Avenue.....	2
T. E. Varney & Co.....	89 Washington Street.....	3
Alonzo T. Pinkham.....	466 Central Avenue.....	3
Arthur G. Tufts.....	85 Washington Street.....	3
Benjamin F. Kennard.....	503 Central Avenue.....	3
Arthur D. Freeman.....	333 Central Avenue.....	2
Frank E. Mulligan & Co.....	460 Central Avenue.....	2
Sweeney & Laughlin.....	5 Waldron Street.....	2
Johanne Marie Lancaster.....	Dover Point Hotel, Dover Point.....	1
Peter Loughlin.....	Piscataqua House, Dover Point.....	1
Frank J. Sherry.....	323 Central Avenue.....	2
Allen B. H. Sykes.....	303 Central Avenue.....	2
Daniel F. Bradley.....	Broadway Hotel.....	1
James Killoren.....	304 Central Avenue.....	2
Patrick Cragin.....	315 Central Avenue.....	2
James Cauley.....	22 Third Street.....	2
Dover Bottling Co.*.....	Fourth and Chestnut Streets.....	3
Walter E. Hussey & Co.....	45 Locust Street.....	2
Jeremiah Y. Wingate.....	31 Silver Street.....	5
Charles T. Newman.....	448 Central Avenue.....	5
William Lamb.....	71 Main Street.....	2
Harry McNally.....	3 Payne Street.....	2
W. H. Vickery & Son.....	362 Central Avenue.....	5
John J. McCann.....	329 Central Avenue.....	2
Thomas McKenna.....	Parker House.....	1

STRAFFORD COUNTY.—Continued.

Name of Licensee.	Street and Number.	Class.
DOVER.—Concluded.		
John E. Libby.....	325 Central Avenue....	2
Joseph Marcotte, Jr.....	40 Third Street.....	2
Dube & Cormier.....	77 Main Street.....	2
David McFadden.....	Franklin House.....	1
Frank Cunningham & Co.....	46 Third Street.....	2
Lenox Hotel Co.....	Lenox Hotel.....	1
John Q. Mulligan & Co.....	Park Tavern.....	1
Horn & Owen.....	492 Central Avenue.....	2
Mallen & Loughlin.....	50 Third Street.....	2
FARMINGTON.		
Charles E. Nutter.....	32 Main Street.....	2
Will W. Roberts.....	7 Main Street.....	5
Ladd & Place.....	3 Central Street.....	2
James W. Locke.....	Mechanic Street.....	2
Wilbur J. Evans.....	9 Main Street.....	5
Everett S. Gray.....	Central House.....	1
Everett S. Gray.....	Central House.....	3
MILTON.		
James H. Willey.....	Main and Silver Streets....	5
Fred M. Chamberlin.....	Phoenix House.....	1
Charles L. Bodwell.....	Milton Hotel.....	1
John H. Lord.....	Central House, Milton Mills....	1
Mary F. Grover.....	Milton House.....	1
ROCHESTER.		
John Hogan.....	13 Factory Court.....	2
Charles F. Pope.....	62 Main Street, East Rochester....	5
Thomas Lamb.....	63 Hanson Street.....	2
Thomas Blake.....	52 Hanson Street.....	2
Rochester Bottling Co.....	7 Hoyt's Court.....	3
Frank Brennan.....	63 North Main Street.....	2
Hiram P. Brann.....	77 North Main Street.....	2
Thomas Bilodeau.....	133 Main Street.....	2
Frank Greenfield.....	21 Arrow Street.....	2
Frank Greenfield.....	21 Arrow Street.....	3
Peter Perreault.....	16 Factory Court.....	2
Charles W. Chisholm.....	Main Street, East Rochester....	2
Patrick Cassidy.....	17 Signal Street.....	2
Patrick Cassidy.....	17 Signal Street.....	3
William J. Haley.....	62 Hanson Street.....	2
William Landry*.....	27 Railroad Avenue.....	2
Joseph Goulet.....	18 Congress Street.....	2
Osborn W. Ramsey.....	55 North Main Street.....	2
Michael J. Heagney.....	42 South Main Street.....	5
Patrick Hanratty.....	41 Hanson Street.....	2
George A. Johnson.....	11 and 13 Railroad Avenue.....	2
Shirley J. Rawson.....	New City Hotel.....	1
Coheco Bottling Works.....	25 Summer Street.....	3
John F. Quinlan.....	Wrisley House.....	1
John F. Quinlan.....	Wrisley House.....	3
Plourde & Roulx.....	5 Factory Court.....	2
R. DeWitt Burnham.....	10 Main Street.....	5
Edward F. Cobb.....	59 North Main Street.....	5
Cobb, Hayes & Co.....	6 Main Street.....	5
George E. Hayes.....	Hotel Hayes.....	1
George W. Flagg.....	15 Hanson Street.....	2
John O'Donnell.....	Autumn St., East Rochester....	2
Stephen F. Shorey.....	21 North Main Street.....	5

STRAFFORD COUNTY.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
ROLLINSFORD.		
George W. Nutter.....	15 Front Street.....	5
Arthur R. Caron & Co.....	Washington Street.....	3
Arthur R. Caron & Co.....	Washington Street.....	2
Daniel E. Holland.....	Salmon Falls Hotel.....	1
Daniel E. Holland.....	Salmon Falls Hotel.....	3
Charles E. Lord.....	Dover and Washington Streets...	2
Fred Caron.....	Washington Street.....	3
Fred Caron.....	Washington Street.....	2
Eugene Ouelette.....	Washington Street.....	3
Eugene Ouelette.....	Washington Street.....	2
John Brisard.....	Franklin and Washington Streets...	3
John Brisard.....	Franklin and Washington Streets...	2
SOMERSWORTH.		
George W. Nutter.....	86 High Street.....	5
Peter L. Moran.....	49 Green Street.....	2
Jonas E. Ellis.....	Homestead Hotel.....	1
Fred Rousseau.....	33 Main Street.....	2
Charles M. Farley.....	10 Spring Street.....	2
Michael J. Casey.....	1 Spring Street.....	2
Aldana Peavey.....	58 and 60 Green Street.....	5
Daniel J. Buckley.....	5 Fore Street.....	5
Sidney F. Greenwood.....	Great Falls Hotel.....	1
Sidney F. Greenwood.....	Great Falls Hotel.....	3
William H. Wiggin.....	24 Market Street.....	2
Edward E. Donahue.....	114 Green Street.....	2
Pierre Morin.....	60 and 64 Washington Street.....	2
Albert Gaudette.....	39 Washington Street.....	2
Joseph Lanois.....	Hotel Somersworth.....	1
Dumais & Tardif.....	Main and Water Streets.....	2
Theodore Bilodeau.....	9 Main Street.....	2
Joseph Routhier.....	173 Main Street.....	2
Joseph Lanois.....	Hotel Somersworth.....	3
Jacques & Routhier.....	8 Fore Street.....	2
Francois Morin.....	253 Main Street.....	2
W. Ashton Horn.....	3 Horn's Court.....	3
John C. Hurd.....	26 Market Street.....	5
Napoleon H. Gilbert.....	23 Myrtle Street.....	3
Cyrus Rollins.....	19 Washington Street.....	2
John Leahy.....	10 Depot Street.....	2
E. R. S. nborn.....	B. & M. R. R. Station.....	6
John C. Hurd.....	26 Market Street.....	3
James T. Noonan.....	17 Elm Street.....	2
Grondin & Breton.....	Main Street.....	2
Alfred Boulay.....	11 Spring Street.....	2
Patrick Grimes & Co.....	49 Elm Street.....	2

LIST OF LICENSES GRANTED

From May 1, 1904, to December 31, 1904, inclusive.

(License Year 1904-1905.)

SULLIVAN COUNTY.

Name of Licensee.	Street and Number.	Class.
CHARLESTOWN.		
Willard A. Swan.....	Eagle Hotel.....	3
Willard A. Swan.....	Eagle Hotel.....	1
George D. Nourse.....	Main Street.....	5
CLAREMONT.		
Edward F. Johnson.....	156 Main Street.....	2
H. B. Glidden.....	22 Tremont Square	5
Edward T. O'Connor†.....	50 Tremont Square.....	5
Anson J. Hood.....	9 Tremont Street.....	2
Michael H. Brady and Edward T. Brady.....	74 Broad Street.....	2
Charles M. Atwood.....	39 Union Street, Lower Village....	2
Robert R. Ager & Co.....	15-17 Tremont Street.....	2
Walter J. Perkins.....	112 Tyler Street.....	3
Maxwell & Slattery.....	160 Main Street.....	2
Charles B. Spofford... ..	40 Tremont Square.....	5
Edward A. Winter.....	Hotel Claremont.....	3
Frank E. Thompson.....	18 Tremont Street.....	2
Edward A. Winter.....	Hotel Claremont.....	1
Frank G. Winn.....	17 Pleasant Street.....	5
Patrick Lynch.....	3 Tremont Street.....	2
Nedom E. Angier	Junction House, Claremont Junc..	1
Nedom E. Angier.....	Junction House, Claremont Junc..	3
Hartley L. Brooks.....	142 Main Street.....	5
George A. Briggs.....	2 Tremont Square.....	5
Horace S. Chase*.....	Chase's Tavern.....	1
Fred C. Buzzell.....	Hotel Cross Building, West Claremont	2
Anson J. Hood.....	9 Tremont Street.....	3
CORNISH.		
Albert L. Peters.....	Valley House Building.....	2
Alfred I. Reynolds.....	Hampshire House.....	1
Alfred I. Reynolds.....	Hampshire House.....	3
CROYDON.		
David A. Sargent.....	Croydon House, East Village.....	1
NEWPORT.		
Perley M. Barry & Co.....	Central Street.....	2
Carlton Hurd.....	2 and 4 North Main Street.....	5
Herbert A. Willey†.....	Main and Sunapee Streets.....	5
Fred E. Lovell.....	62 North Main Street.....	5
Henry L. Barker.....	Phenix Hotel.....	1
Carl B. Brown & Co.....	French's Tavern.....	1
F. L. Hutchins Co.....	Newport House.....	1

SULLIVAN COUNTY.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
PLAINFIELD.		
Winston Churchill.....	Cornish Inn.....	1
SUNAPEE.		
Wilbur A. Young*.....	Young's Hotel.....	3
Wilbur A. Young*.....	Young's Hotel.....	1

* License transferred. See list, pp. 124-127.

† License revoked. See list, page 128.

‡ License surrendered. See list, page 129.

§ Business discontinued.

LIST OF LICENSES TRANSFERRED

From May 1, 1904, to December 31, 1904, inclusive.

(License year, 1904-1905.)

Showing the present holder and location where exercised, and
the licensee from whom, or location from which, transferred.

Name of Licensee.	Street and Number.	Class.
ALLENSTOWN.		
Alfred Courtemanche	Main and Depot Streets.....	2
Transferred from Joseph E. Lamiette.		
ASHLAND.		
Charles B. Woodman	Thompson House.....	1
Transferred from James Brogan.		
Charles B. Woodman	Thompson House.....	3
Transferred from James Brogan.		
BERLIN.		
Cyril Brooks.....	15 Green Street.....	3
Transferred from John D. Lary.		
Edward P. McGiveny.....	98 Main Street.....	2
Transferred from John Sheridan.		
King & Jolin.....	6 Mason Street.....	2
Transferred from Archille Lessard.		
Michael J. Sutton.....	52 Main Street.....	2
Transferred from Sutton & Berube.		
George A. St. Germain	Between Nos. 62 and 64 Main St....	2
Transferred from William G. Dupont.		
James S. Bennett.....	72 Main Street.....	2
Transferred from Henry G. Smith.		
CARROLL.		
The Barron, Merrill & Barron Co.*	Fabyan House.....	1
Transferred from Fabyan House Cottage.		
The Barron, Merrill & Barron Co.*	Fabyan House.....	3
Transferred from Fabyan House Cottage.		
The Barron, Merrill & Barron Co..	Fabyan House Cottage.....	1
Transferred from Fabyan House.		
The Barron, Merrill & Barron Co..	Fabyan House Cottage.....	3
Transferred from Fabyan House.		
CHESTERFIELD.		
Wallace K. Ware.....	Hotel on Main Street.....	1
Transferred from Lakeside House.		
Wallace K. Ware.....	Hotel on Main Street.....	3
Transferred from Lakeside House.		

LIST OF LICENSES TRANSFERRED.—*Continued.*

Name of Licensee.	Street and Number.	Class.
CLAREMONT.		
Kelleher, Nichols & Co.	Chase's Tavern.....	1
Transferred from Horace S. Chase.		
COLEBROOK.		
Charles S. Aldrich.....	East side Main Street.....	5
Transferred from Fred G. Vancose Building.		
CONCORD.		
Timothy J. Sullivan.....	South side Warren, near Main St..	2
Transferred from Timothy J. Sullivan & Co.		
Alfred E. Ford.....	2 Pleasant Street Extension.....	2
Transferred from Ahern & Sweeney.		
DOVER.		
Dover Bottling Co.....	Fourth and Chestnut Streets.....	3
Transferred from Dover Bottling Co. (partnership changed).		
HAMPTON.		
George E. Felch, Jr.....	Lafayette Road.....	2
Transferred from Hampton Beach.		
KEENE.		
Holland & Coffey.....	40 Church Street.....	2
Transferred from Duffy & Donovan.		
Bert W. Hodgkins.....	39 Main Street.....	5
Transferred from 39 Central Square.		
LACONIA.		
Katie M. Cushing.....	Mt. Belknap House, Lakeport.....	1
Transferred from Noah W. Goss.		
Goss Brothers.....	766 Union Avenue, Lakeport.....	3
Transferred from Noah W. Goss.		
Lyman B. Woodman.....	Eagle Hotel.....	1
Transferred from William P. Chester.		
MANCHESTER.		
Joseph P. Chatel.....	43 Manchester Street.....	2
Transferred from 69 Manchester Street.		
Joseph P. Chatel.....	37 Manchester Street.....	3
Transferred from 61 & 63 Manchester Street.		
John R. Ready.....	75 Manchester Street.....	2
Transferred from William G. Mealey.		
William H. Goodwin.....	Windsor Hotel.....	1
Transferred from John A. Ballou.		
John A. Ballou.....	Hotel Milford.....	1
Transferred from Waldo S. Plastringe.		
John T. Levasseur.....	639 Elm Street.....	2
Transferred from Bruno & Ferretti.		

LIST OF LICENSES TRANSFERRED.—*Continued.*

Name of Licensee.	Street and Number.	Class.
MILFORD.		
William D. Smith* .....	| Hotel Howison.....	1
Transferred from Fred B. Bartlett.		
Elbridge G. Smith .....	| Hotel Howison.....	1
Transferred from William D. Smith.		
NASHUA.		
Merrifield & Co.*.....	| 22 West Hollis Street.....	2
Transferred from George F. Merrifield.		
George A. Lockwood.....	| 22 West Hollis Street.....	2
Transferred from Merrifield & Co.		
Joseph A. Bellavance.....	| 2 Canal Street	2
Transferred from Bellavance & O'Neil.		
Joseph A. Bellavance.....	| 4 Canal Street.....	3
Transferred from Bellavance & O'Neil.		
Bartholomew J. Hargraves and John J. McGlynn.....	| 159 West Pearl Street.....	2
Transferred from Joseph Richard.		
Coffey & Sweeney .....	| 16 High Street.....	2
Transferred from Coffey & Gilhooly.		
F. Russell Lord.....	| 8 and 10 Factory Street.....	2
Transferred from Gate City Wine Co.		
PORTSMOUTH.		
Thomas Lynskey .....	| 6 Vaughan Street.....	2
Transferred from John H. Barrett.		
John H. Wiggin.....	| 51 Deer Street.....	2
Transferred from Harry E. Northup.		
ROCHESTER.		
Charles P. Brown.....	| 11 and 13 Railroad Avenue.....	2
Transferred from George A. Johnson.		
Brahaney & Brennan .....	| 27 Railroad Avenue.....	2
Transferred from William Landry.		
SOMERSWORTH.		
George S. Elliott.....	| Homestead Hotel.....	1
Transferred from Jonas E. Ellis.		
Louis Gagne.....	| 11 Spring Street.....	2
Transferred from Alfred Boulay.		
STEWARTSTOWN.		
W. A. Fuller .....	| Main Street, West Stewartstown..	2
Transferred from Francis Blais.		

LIST OF LICENSES TRANSFERRED.—*Concluded.*

Name of Licensee.	Street and Number.	Class.
SUNAPEE.		
Wilbur A. Young and George H. Carter.....	Young's Hotel.....	1
Transferred from Wilbur A. Young.		
Wilbur A. Young and George H. Carter.....	Young's Hotel.....	3
Transferred from Wilbur A. Young.		
WALPOLE.		
Andrew J. Meany	29 River Street, North Walpole....	2
Transferred from John H. Flavin.		
Crescent Bottling Co.....	Near toll bridge.....	3
Transferred from Isaac Ledger.		

* A second transfer of this license—See above list.

LIST OF LICENSES REVOKED

From May 1, 1904, to December 31, 1904, inclusive.

(License Year 1904-1905.)

Name of Licensee.	Street and Number.	Class.
BERLIN.		
Alfred E. Buckley	5 Mechanic Street	2
Valliers & Co.	Commercial House	1
Morin & Bouchard.	Main Street, Little Gagnon Block.	1
CLAREMONT.		
Edward T. O'Connor.	50 Tremont Square.	5
CONWAY.		
Harry H. Randall.	Hotel Randall, North Conway.	1
HAMPTON.		
Eli G. Bunker	Newmarket Inn.	1
KINGSTON.		
Sanborn & Ledoux.	Hotel Lake View, South Kingston.	1
Sanborn & Ledoux.	Hotel Lake View, South Kingston.	3
LANCASTER.		
Guy W. Gaymond	The Lancaster House.	1
LEBANON.		
Twombly & Co.	16 Court Street.	3
MANCHESTER.		
Gustave L. DeMartigny.	685 Elm Street.	5
NEWPORT.		
Herbert A. Willey	Main and Sunapee Streets.	5
WALPOLE.		
Michael H. Murphy	Riverside Hotel, North Walpole.	1
Patrick A. Killeen.	Walpole House, North Walpole.	1

LIST OF LICENSES SURRENDERED

From May 1, 1904, to December 31, 1904, inclusive.

(License Year 1904-1905. Licensee deceased.)

Name of Licensee.	Street and Number.	Class.
KEENE.		
Cornelius E. Sullivan.....	Commercial Street.....	2
KINGSTON.		
Amos R. Ingham.....	Kingston House, Kingston Plains.	1
Amos R. Ingham.....	Kingston House, Kingston Plains.	3
NASHUA.		
Edward D. Woodward.....	Hotel, 80 Canal Street.....	1
William T. O'Grady	153 West Pearl Street.....	2
NEWMARKET.		
Gideon McCarty.....	1 Central Street.....	2

BELKNAP COUNTY.

Table

Showing vote of the towns of the state for license and against license at the general election, November 8, 1904; also the vote of the cities and towns at special meeting held May 12, 1903.

Cities and Towns.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Alton	142	99	142	101	1,500
Barnstead	108	87	71	96	1,072
Belmont	97	140	69	147	1,294
Center Harbor	40	41	33	45	422
Gilford	14	41	22	69	661
Gilmanton	87	73	47	95	1,100
Meredith	172	196	139	214	1,713
New Hampton	23	70	15	91	852
Sanbornton	14	79	5	71	944
Tilton	103	274	177	171	1,926
Total	800	1,100	720	1,100	11,484
Laconia			940	423	8,042
Total			1,660	1,523	19,526

CARROLL COUNTY.

Table

Showing vote of the towns of the state for license and against license at the general election, November 8, 1904; also the vote of the cities and towns at special meeting held May 12, 1903.

Cities and Towns.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Albany	3	10	3	30	210
Bartlett.....	37	66	38	71	1,013
Brookfield.....	13	23	1	13	296
Chatham.....	5	28	8	22	269
Conway.....	147	261	172	291	3,154
Eaton.....	2	14	7	41	365
Effingham.....	14	57	9	71	600
Freedom.....	9	48	15	53	594
Hart's Location*.....		2			38
Jackson.....	28	59	48	57	622
Madison.....	6	26	8	70	529
Moultonborough	57	89	78	124	901
Ossipee.....	61	237	47	126	1,479
Sandwich.....	63	120	54	171	1,077
Tamworth.....	10	44	28	116	1,050
Tuftenborough.....	27	80	12	35	663
Wakefield.....	169	193	144	93	1,645
Wolfeborough.....	270	256	179	177	2,390
Total	921	1,613	851	1,561	16,895

* No meeting held May 12, 1903.

CHESHIRE COUNTY.

Table

Showing vote of the towns of the state for license and against license at the general election, November 8, 1904; also the vote of the cities and towns at special meeting held May 12, 1903.

Cities and Towns.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Alstead.....	137	31	112	48	799
Chesterfield.....	86	28	60	22	981
Dublin.....	8	25	17	39	620
Fitzwilliam.....	49	91	54	127	987
Gilsum.....	56	45	52	60	590
Harrisville.....	49	86	68	58	791
Hinsdale.....	210	131	246	142	1,933
Jaffrey.....	124	180	151	173	1,891
Marlborough.....	82	150	76	147	1,524
Marlow.....	59	49	39	45	488
Nelson.....	4	21	4	36	295
Richmond.....	37	48	40	44	459
Rindge.....	20	98	36	126	855
Roxbury.....	.....	13	1	11	100
Stoddard.....	43	22	5	32	367
Sullivan.....	12	27	5	32	287
Surry.....	14	20	8	20	250
Swanzey.....	123	164	184	163	1,570
Troy.....	78	148	92	100	1,527
Walpole.....	261	159	210	102	2,693
Westmoreland.....	19	47	16	61	875
Winchester.....	152	216	251	196	2,274
Total.....	1,623	1,799	1,727	1,784	22,156
Keene.....	.....	.....	1,011	931	9,165
Total.....	.....	.....	2,738	2,715	31,321

COOS COUNTY.

Table

Showing vote of the towns of the state for license and against license at the general election, November 8, 1904; also the vote of the cities and towns at special meeting held May 12, 1903.

Cities and Towns.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Carroll.....	74	58	98	8	710
Clarksville.....	2	18	.....	18	307
Colebrook.....	172	236	139	234	1,876
Columbia.....	21	49	9	18	690
Dalton.....	37	94	38	46	592
Dummer.....	15	27	13	11	349
Errol*.....	16	13	.....	.....	305
Gorham.....	158	140	87	41	1,797
Jefferson.....	43	80	14	46	1,080
Lancaster.....	254	386	215	295	3,190
Milan.....	94	70	65	54	1,135
Northumberland.....	211	137	207	44	1,797
Pittsburg.....	10	45	27	46	687
Randolph.....	11	4	2	14	137
Shelburne.....	3	31	.....	22	283
Stark.....	16	38	26	37	733
Stewartstown.....	111	96	65	53	1,150
Stratford.....	147	48	51	58	968
Wentworth's Location*.....	.....	.....	.....	.....	58
Whitefield.....	189	229	174	166	2,157
Total.....	1,584	1,799	1,230	1,211	20,001
Berlin.....	.....	.....	566	192	8,886
Total.....	.....	.....	1,796	1,403	28,887

* No meeting held May 12, 1903.

GRAFTON COUNTY.

Table

Showing vote of the towns of the state for license and against license at the general election, November 8, 1904; also the vote of the cities and towns at special meeting held May 12, 1903.

Cities and Towns.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Alexandria.....	3	16	9	55	630
Ashland.....	109	168	161	80	1,289
Bath.....	29	125	54	105	1,006
Benton.....	4	6	6	20	209
Bethlehem.....	58	104	55	123	1,261
Bridgewater.....	1	24	3	14	244
Bristol.....	80	99	79	142	1,600
Campton.....	31	79	10	71	999
Canaan.....	77	158	99	44	1,444
Dorchester.....	6	14	4	20	308
Easton.....	4	9	4	30	249
Ellsworth.....	1	5	1	4	107
Enfield.....	93	150	121	89	1,845
Franconia.....	23	39	5	43	655
Grafton.....	52	81	65	66	748
Groton.....	6	8	6	17	346
Hanover.....	70	281	40	184	1,884
Haverhill.....	346	267	263	179	3,414
Hebron.....	9	14	4	21	214
Holderness.....	11	53	13	49	662
Landaff.....	8	17	14	37	500
Lebanon.....	371	599	493	328	4,965
Lincoln.....	34	44	24	19	541
Lisbon.....	133	213	94	255	2,221
Littleton.....	342	431	195	460	4,066
Livermore*.....	1	4	.....	.....	191
Lyman.....	24	31	6	31	426
Lyme.....	26	77	14	103	1,080
Monroe.....	23	48	13	24	545
Orange.....	3	17	4	5	213
Orford.....	28	52	19	54	890
Piermont.....	22	82	13	91	637
Plymouth.....	121	218	180	87	1,972
Rumney.....	46	113	58	93	837
Thornton.....	12	26	14	46	552
Warren.....	80	137	77	115	799
Waterville.....	.....	1	.....	4	50
Wentworth.....	16	37	24	56	617
Woodstock.....	44	80	59	51	628
Total.....	2,347	3,927	2,303	3,215	40,844

* No meeting held May 12, 1903.

HILLSBOROUGH COUNTY.

Table

Showing vote of the towns of the state for license and against license at the general election, November 8, 1904; also the vote of the cities and towns at special meeting held May 12, 1903.

Cities and Towns.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Amherst.....	61	86	56	93	1,231
Antrim.....	75	126	85	193	1,366
Bedford.....	12	37	7	66	1,148
Bennington... ..	54	66	46	74	667
Brookline	56	73	41	56	606
Deering	29	14	38	23	486
Francestown.....	35	88	53	72	693
Goffstown.....	166	258	99	169	2,528
Greenfield.....	27	79	51	52	605
Greenville.....	95	90	95	83	1,608
Hancock.....	64	82	51	79	642
Hillsborough.....	211	187	231	214	2,254
Hollis	12	73	3	100	910
Hudson.....	21	88	8	108	1,261
Litchfield.....	4	6	9	20	243
Lyndeborough.....	15	75	7	65	686
Mason.....	4	15	7	30	358
Merrimack.....	80	78	131	87	1,234
Milford	310	453	379	336	3,739
Mont Vernon.....	25	32	9	39	453
New Boston.....	97	90	80	63	1,002
New Ipswich.....	71	54	44	58	911
Pelham.....	38	58	39	108	875
Peterborough.....	185	212	210	263	2,527
Sharon.....	18	9	9	9	122
Temple.....	25	45	10	32	313
Weare.....	111	138	90	100	1,553
Wilton.....	137	205	208	117	1,696
Windsor.....	1	4	.....	5	38
Total.....	2,039	2,821	2,096	2,714	31,755
Manchester.....	.....	.....	5,861	1,738	56,987
Nashua.....	.....	.....	2,272	748	23,898
Total.....	.....	.....	10,229	5,200	112,640

MERRIMACK COUNTY.

Table

Showing vote of the towns of the state for license and against license at the general election, November 8, 1904; also the vote of the cities and towns at special meeting held May 12, 1903.

Cities and Towns.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Allentown.....	113	25	99	25	1,496
Andover.....	169	80	146	92	1,179
Boscawen.....	99	145	108	141	1,455
Bow.....	8	60	4	76	617
Bradford.....	116	104	86	106	805
Canterbury.....	36	52	.....	36	821
Chichester.....	8	46	12	49	598
Danbury.....	16	55	29	70	654
Dunbarton.....	9	25	5	39	551
Epsom.....	11	61	9	63	771
Henniker.....	109	118	96	134	1,507
Hill.....	9	70	12	78	603
Hooksett.....	119	32	92	50	1,665
Hopkinton.....	109	127	144	164	1,652
London.....	70	117	123	133	960
Newbury.....	48	56	44	47	424
New London.....	31	84	3	97	768
Northfield.....	58	202	63	120	1,227
Pembroke.....	248	94	211	90	3,183
Pittsfield.....	209	228	287	192	2,129
Salisbury.....	22	53	31	66	604
Sutton.....	81	67	26	93	776
Warner.....	76	144	44	113	1,358
Webster.....	11	48	12	62	496
Wilmot.....	12	47	10	55	653
Total.....	1,742	2,140	1,696	2,191	26,952
Concord.....	.....	.....	2,159	1,365	19,692
Franklin.....	.....	.....	568	476	5,846
Total.....	.....	.....	4,423	4,032	52,430

ROCKINGHAM COUNTY.

Table

Showing vote of the towns of the state for license and against license at the general election, November 8, 1904; also the vote of the cities and towns at special meeting held May 12, 1903.

Cities and Towns.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Atkinson.....	19	35	9	59	442
Auburn.....	64	56	106	65	682
Brentwood.....	13	60	8	40	957
Candia.....	93	86	47	87	1,057
Chester.....	55	139	70	105	861
Danville.....	15	44	12	57	615
Deerfield.....	53	78	74	54	1,162
Derry.....	319	455	365	277	3,583
East Kingston.....	17	46	16	36	496
Epping.....	187	106	134	102	1,611
Exeter.....	407	493	438	486	4,922
Fremont.....	25	61	3	88	749
Greenland.....	11	16	3	21	607
Hampstead.....	30	66	59	91	823
Hampton.....	118	154	157	121	1,209
Hampton Falls.....	1	49	2	63	560
Kensington.....	6	24	9	51	524
Kingston.....	108	95	98	50	1,132
Londonderry.....	67	122	74	100	1,408
Newcastle.....	22	42	12	67	581
Newfields.....	76	37	96	33	647
Newington.....	4	41	9	46	390
Newmarket.....	303	101	238	79	2,892
Newton.....	76	111	81	82	924
North Hampton.....	36	48	60	53	812
Northwood.....	44	102	19	114	1,304
Nottingham.....	102	48	86	40	638
Plaistow.....	36	70	35	92	1,027
Raymond.....	116	149	109	111	1,100
Rye.....	24	78	22	95	1,142
Salem.....	36	127	54	171	2,041
Sandown.....	58	39	47	31	400
Seabrook.....	53	282	102	213	1,497
South Hampton.....	5	12	8	36	297
Stratham.....	31	46	11	67	718
Windham.....	25	54	28	50	641
Total.....	2,655	3,572	2,701	3,333	40,451
Portsmouth.....			1,797	234	10,637
Total.....			4,498	3,567	51,088

STRAFFORD COUNTY.

Table

Showing vote of the towns of the state for license and against license at the general election, November 8, 1904; also the vote of the cities and towns at special meeting held May 12, 1903.

Cities and Towns.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Barrington.....	41	168	107	132	1,208
Durham.....	11	73	17	67	996
Farmington.....	263	220	228	193	2,265
Lee.....	15	35	3	46	545
Madbury.....	4	21	3	43	336
Middleton.....	24	43	8	17	300
Milton.....	174	98	99	127	1,625
New Durham.....	22	32	24	27	625
Rollinsford.....	178	69	130	72	1,701
Strafford.....	46	81	36	77	1,040
Total.....	768	840	655	801	10,641
Dover.....			1,783	748	13,207
Rochester.....			891	530	8,466
Somersworth.....			797	162	7,023
Total.....			4,126	2,241	39,337

SULLIVAN COUNTY.

Table

Showing vote of the towns of the state for license and against license at the general election, November 8, 1904; also the vote of the cities and towns at special meeting held May 12, 1903.

Cities and Towns.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Aeworth.....	15	61	3	40	594
Charlestown.....	156	109	155	87	1,473
Claremont.....	524	729	771	351	6,498
Cornish.....	121	93	98	75	962
Croydon.....	48	30	30	21	372
Goshen.....	15	59	32	53	345
Grantham.....	8	21	15	31	374
Langdon.....	24	23	12	33	339
Lempster.....	17	39	6	28	391
Newport.....	200	431	369	185	3,126
Plainfield.....	37	97	40	48	1,114
Springfield.....	16	20	14	32	439
Sunapee.....	68	156	120	112	946
Unity.....	23	65	17	40	572
Washington.....	26	33	24	37	464
Total.....	1,298	1,966	1,706	1,173	18,009

RECAPITULATION.

Counties. (Towns in.	November 8, 1904.		May 12, 1903.		Popula- tion.
	For license.	Against license.	For license.	Against license.	
Belknap.....	800	1,100	720	1,100	11,484
Carroll.....	921	1,613	851	1,561	16,895
Cheshire.....	1,623	1,799	1,727	1,784	22,156
Cooks.....	1,584	1,799	1,230	1,211	20,001
Grafton.....	2,347	3,927	2,303	3,215	40,844
Hillsborough.....	2,039	2,821	2,096	2,714	31,755
Merrimack.....	1,742	2,140	1,696	2,191	26,952
Rockingham.....	2,655	3,572	2,701	3,333	40,451
Strafford.....	768	840	655	801	10,641
Sullivan.....	1,298	1,966	1,706	1,173	18,009
Total.....	15,777	21,577	15,685	19,083	239,188
Aggregate vote of cities.....	.....	.....	18,645	7,547	171,789
Total.....	.....	.....	34,330	26,630	410,977

LICENSE FEES.

Prescribed by section 7, chapter 95, Session Laws 1903.

First Class \$25 to \$1,000
(in the discretion of the State Board of License Commissioners).

Second Class :

In cities of over 40,000 population	\$1,200
In cities of from 18,000 to 40,000 population	800
In cities from 10,000 to 18,000 population	600
In cities of under 10,000 population	400
In towns whose population exceeds 2,500	300
In all other towns	250

Third Class :

In cities of over 40,000 population.	\$800
In cities of from 18,000 to 40,000 population	600
In cities of from 10,000 to 18,000 population	300
In cities of under 10,000 population	200
In towns whose population exceeds 2,500	150
In all other towns	100

Fourth Class :

In cities of over 40,000 population	\$600
In cities of from 18,000 to 40,000 population	500
In cities of from 10,000 to 18,000 population	400
In cities of under 10,000 population	250
In towns whose population exceeds 2,500	200
In all other towns	150

Fifth Class \$10

Sixth Class \$50 to \$200
(in the discretion of the State Board of License Commissioners).

Seventh Class \$100 to \$300
(in the discretion of the State Board of License Commissioners).

Eighth Class \$300 to \$2,000
(in the discretion of the State Board of License Commissioners).

CLASSIFICATION OF CITIES AND TOWNS

According to fees prescribed for second, third and fourth class licenses, based upon population.

Cities over 40,000 population.

Second Class, \$1,200. Third Class, \$800. Fourth Class, \$600.
Manchester.

Cities 18,000 to 40,000 population.

Second Class, \$800. Third Class, \$600. Fourth Class, \$500.
Concord. Nashua.

Cities 10,000 to 18,000 population.

Second Class, \$600. Third Class, \$300. Fourth Class, \$400.
Dover. Portsmouth.

Cities under 10,000 population.

Second Class, \$400. Third Class, \$200. Fourth Class, \$250.
Berlin. Laconia.
Franklin. Rochester.
Keene. Somersworth.

Towns over 2,500 population.

Second Class, \$300. Third Class, \$150. Fourth Class, \$200.
Claremont. Lebanon.
Conway. Littleton.
Derry. Milford.
Exeter. Newmarket.
Goffstown. Newport.
Haverhill. Pembroke.
Lancaster. Peterborough.
Walpole.

All other towns.

Second Class, \$250. Third Class, \$100. Fourth Class, \$150.

RAISED FEES.

List of cities and towns* which have raised fees under the provision of section 32, chapter 95, Session Laws 1903, relative to second, third and fourth class licenses. (See table on following page.)

Andover.	Laconia.
Berlin.	Lebanon.
Canaan.	Lincoln.
Charlestown.	Milan.
Derry.	Milford.
Enfield.	Newport.
Epping.	North Hampton.
Farmington.	Northumberland.
Franklin.	Plymouth.
Gorham.	Rollinsford.
Greenville.	Swanzey.
Haverhill.	Wilton.
Hinsdale.	Winchester.
Keene.	Wolfeborough.

Woodstock.

*Voting for license at special meeting held May 12, 1903.

***LICENSE CITIES AND TOWNS, AND FEES FOR
SECOND, THIRD AND FOURTH
CLASS LICENSES.**

Table showing for each license city and town, the fees for second, third and fourth class licenses, based upon population, as prescribed by section 7, chapter 95, Session Laws 1903, also the fees in force December 31, 1904. (Fees in certain cities and towns having been raised under the provision of section 32 of said chapter.)

Cities and Towns.	Fees prescribed by law.			Fees in force December 31, 1904.		
	Class.			Class.		
	2	3	4	2	3	4
Allenstown.....	\$250	\$100	\$150	\$250	\$100	\$150
Alstead.....	250	100	150	250	100	150
Alton.....	250	100	150	250	100	150
Andover.....	250	100	150	1,200	800	600
Ashland.....	250	100	150	250	100	150
Auburn.....	250	100	150	250	100	150
Berlin.....	400	200	250	1,000	800	600
Canaan.....	250	100	150	1,200	800	600
Carroll.....	250	100	150	250	100	150
Charlestown.....	250	100	150	1,200	800	600
Chesterfield.....	250	100	150	250	100	150
Claremont.....	300	150	200	300	150	200
Concord.....	800	600	500	800	600	500
Cornish.....	250	100	150	250	100	150
Croydon.....	250	100	150	250	100	150
Deerfield.....	250	100	150	250	100	150
Deering.....	250	100	150	250	100	150
Derry.....	300	150	200	600	300	400
Dover.....	600	300	400	600	300	400
Dummer.....	250	100	150	250	100	150
Enfield.....	250	100	150	1,000	600	500
Epping.....	250	100	150	1,200	800	600
Farmington.....	250	100	150	500	200	300
Franklin.....	400	200	250	1,200	800	600
Gorham.....	250	100	150	500	200	300
Greenville.....	250	100	150	1,200	800	600
Hampton.....	250	100	150	250	100	150
Harrisville.....	250	100	150	250	100	150
Haverhill.....	300	150	200	1,200	800	600
Hillsborough.....	250	100	150	250	100	150
Hinsdale.....	250	100	150	800	300	600
Hooksett.....	250	100	150	250	100	150
Keene.....	400	200	250	1,200	800	600
Kingston.....	250	100	150	250	100	150

* At special meeting held May 12, 1903.

LICENSE CITIES AND TOWNS.—*Concluded.*

Cities and Towns.	Fees prescribed by law.			Fees in force December 31, 1904.		
	Class.			Class.		
	2	3	4	2	3	4
Laconia.....	\$400	\$200	\$250	\$600	\$300	\$375
Lebanon.....	300	150	200	1,200	800	600
Lincoln.....	250	100	150	1,200	800	600
Manchester.....	1,200	800	600	1,200	800	600
Merrimack.....	250	100	150	250	100	150
Milan.....	250	100	150	800	100	150
Milford.....	300	150	200	700	600	600
Nashua.....	800	600	500	800	600	500
New Boston.....	250	100	150	250	100	150
Newfields.....	250	100	150	250	100	150
Newmarket.....	300	150	200	300	150	200
Newport.....	300	150	200	1,000	600	600
North Hampton.....	250	100	150	1,200	800	600
Northumberland.....	250	100	150	300	100	150
Nottingham.....	250	100	150	250	100	150
Pembroke.....	300	150	200	300	150	200
Pittsfield.....	250	100	150	250	100	150
Plymouth.....	250	100	150	1,200	200	600
Portsmouth.....	600	300	400	600	300	400
Rochester...	400	200	250	400	200	250
Rollinsford.....	250	100	150	500	100	150
Sandown.....	250	100	150	250	100	150
Somersworth.....	400	200	250	400	200	250
Stewartstown.....	250	100	150	250	100	150
Sunapee.....	250	100	150	250	100	150
Swanzey.....	250	100	150	1,200	800	600
Tilton.....	250	100	150	250	100	150
Wakefield.....	250	100	150	250	100	150
Walpole.....	300	150	200	300	150	200
Whitefield.....	250	100	150	250	100	150
Wilton.....	250	100	150	400	100	150
Winchester.....	250	100	150	1,200	500	600
Wolfeborough.....	250	100	150	1,000	800	600
Woodstock.....	250	100	150	1,200	300	300

LICENSE CITIES AND TOWNS ON AND AFTER
MAY 1, 1905.

List of towns voting for license at the General Election, November 8, 1904 (vote in effect May 1, 1905); together with the license cities of the state.

Allenstown.	Keene.*
Alstead	Kingston.
Alton.	Laconia.*
Andover.	Langdon.
Auburn.	Manchester.*
Barnstead.	Marlow.
Berlin.*	Merrimack.
Bradford.	Milan.
Candia.	Milton.
Carroll.	Nashua.*
Charlestown.	New Boston.
Chesterfield.	Newfields.
Concord.*	New Ipswich.
Cornish.	Newmarket.
Croydon.	Northumberland.
Deering.	Nottingham.
Dover.*	Pembroke.
Epping.	Portsmouth.*
Errol.	Randolph.
Farmington.	Rochester.*
Franklin.*	Rollinsford.
Gilmanton.	Sandown.
Gilsum.	Sharon.
Gorham.	Somersworth.*
Greenville.	Stewartstown.
Haverhill.	Stoddard.
Hillsborough.	Stratford.
Hinsdale.	Walpole.
Hooksett.	Wolfeborough.

* License city.

CONCORD, N. H., January 3, 1905.

To His Excellency the Governor and the Honorable Council:

I have examined the accounts of the treasurer of the State Board of License Commissioners for the twelve months ending December 31, 1904, inspecting all applications for licenses and verifying the proper disposition of the money received on deposit with them.

I find all moneys received from fees, forfeitures and interest accounted for, and proper vouchers for all disbursements made.

The records are neatly and accurately kept and the business of the office conducted in such a manner as to clearly show from whom and what source all moneys are derived, and a clear and detailed statement of all expenses and disbursements.

ALFRED A. COLLINS,

Auditor.

Respectfully submitted,

HENRY W. KEYES,

Treasurer.

CONCORD, January 7, 1905.

APPENDIX.

LAWS OF 1903.

CHAPTER 95.

AN ACT TO REGULATE THE TRAFFIC IN INTOXICATING LIQUOR.

SECTION

1. Meaning of words "liquor" and "person."
2. Board of license commissioners created; tenure of office; compensation; to give bonds; records and report.
3. Board to have offices in Concord.
4. Board may employ necessary clerks.
5. Special agents; appointment and duties.
6. Classes of licenses; serving liquor at tables; sale of cider; expiration of licenses.
7. Fees for licenses of various classes.
8. Certain persons not to receive licenses; fee to be deposited and bond filed.
9. Building within two hundred feet of church or schoolhouse not to be licensed.
10. Bond of clerk and treasurer of board; disposition of fees collected; records to be open to inspection of certain officers; audit of accounts.
11. Transfer of licenses to other premises.
12. Transfer of licenses to other persons.
13. Surrender of license by administrator, etc.; rebate.
14. Revocation of licenses.
15. Sale of liquor to certain persons prohibited.
16. Hours and days of sale regulated.
17. Sale of adulterated liquor prohibited; liquor not to be served by female or person convicted of felony; doors to be closed at times when sale is forbidden; use of screens, etc., prohibited; view of room to be unobstructed.

SECTION

18. No recovery for liquor sold to be drunk on the premises; penalty for taking security for debt.
19. Town and city officers may order licensees not to sell, when; penalty for violation.
20. Certain licenses not to be exercised in dwelling house.
21. Certain persons may enter upon premises to inspect; samples of liquor may be taken; penalty for adulteration.
22. Sales by druggists regulated.
23. Druggists to keep record of sales; form of record and certificate.
24. Books, certificates, etc., open to inspection.
Fraudulent certificate or prescription; penalty.
26. Fraudulent druggist's license; penalty for sale under.
27. Notice not to sell to habitual drunkard; civil liability for sale after notice.
28. Regulations under first-class licenses to be prescribed by board; penalty for violation.
29. What deemed *prima facie* evidence of sale.
30. False statements in application for license.
31. Acceptance of license provisions by popular vote; sense of voters to be taken, when and how; result to be certified to board.
32. Increase of license fee by town or city.
33. Violations in license town; penalty.
34. Clerk of board to furnish to cities and towns lists of licenses therein.

*Be it enacted by the Senate and House of Representatives in
General Court Convened:*

Meaning of
words "liqu-
or" and
"person."

SECTION 1. The term "liquor" as used in this act includes and means all distilled and rectified spirits, wines, fermented and malt liquors; and the word "person" shall include firms, associations, co-partnerships, and corporations.

License com-
missioners;
tenure of of-
fice; compen-
sation; bonds
of; records
and report.

SECT. 2. Within ten days from the passage of this act, the governor, with the advice and consent of the council, shall appoint a state board of license commissioners consisting of three members, not more than two of whom shall belong to the same political party, who shall hold office for the term of two, four and six years, respectively, the length of the term of each to be fixed in his commission, and each shall continue in office until his successor has been appointed and qualified. Thereafter, beginning in the year 1905, one member of said board shall be appointed in the month of May of each alternate year for a term of six years from the first Monday in June next ensuing. If a vacancy shall occur in said board it shall be filled for the residue of the term. The chairman and clerk and treasurer of the board shall be appointed and commissioned as such; and the annual salary of said chairman and said clerk and treasurer shall be twenty-five hundred dollars each, and that of the other member twenty-four hundred dollars. No member of said board shall be directly or indirectly interested in the liquor business. The members of said board shall each execute and file with the secretary of state a bond to the people of the state in the sum of ten thousand dollars aside from the treasurer who shall furnish a bond for fifty thousand dollars, with sureties approved by the governor and council, conditioned for the faithful performance of duty. Said board shall keep a record of their doings and hearings, and shall make an annual report to the governor and council on or before the second Monday in each calendar year, which shall contain such statements, facts and explanations as will disclose the actual workings of this act and its bearings upon the welfare of the state, including a statement of all receipts collected under this act and all expenses incurred, and also such suggestions as to the general policy of the state and such amend-

ments of this act as said license commissioners deem appropriate. Said board of license commissioners may be made a party to all acts and proceedings under this act. From all other parties to such action and proceedings they shall be entitled to due notice of the proceedings therein, and shall be duly served with copies of all papers bearing thereon. Any or all of the members of said board may be removed by the governor and council on good cause shown.

SECT. 3. Said board of license commissioners shall be provided with suitable rooms for offices in the city of Concord. Offices in Concord.

SECT. 4. Said board of license commissioners, with the approval of the governor and council, are hereby authorized and empowered to employ such clerks as are, in their opinion, necessary for the proper transaction of the business of their office and to fix their compensation. To employ necessary clerks.

SECT. 5. Said board of license commissioners, with the approval of the governor and council, may appoint one or more special agents and fix their compensation. It shall be the duty of said special agents, under the direction of the board of license commissioners, to investigate all matters relating to the collection of license fees or penalties under this act, and in relation to compliance with law by persons holding licenses under the terms of this act. Said special agents may be removed by the board of license commissioners. Any commissioner or special agent may enter any place where liquor is sold, at any time, and may examine any license certificate issued or purporting to have been issued under the terms of this act. He may investigate any other matters in connection with the sale of liquor, and shall make complaints for violations of this act. Special agents; appointment and duties.

SECT. 6. Licenses shall be of the following classes: Classes of licenses.

First class.—To sell liquor of any kind, to be drunk on the premises, to be issued only to innholders. First.

Second class.—To sell liquor of any kind in quantities less than five gallons to one person at one time. Second.

Third class.—To sell liquor of any kind not to be drunk on the premises. Third.

Fourth. Fourth class.—To sell malt liquors, cider or light wines, containing not more than fifteen per cent. of alcohol, to be drunk on the premises.

Fifth. Fifth class. For retail druggists and apothecaries to sell liquor of any kind for medicinal, mechanical, chemical and sacramental purposes only, and for dealers in hardware, paints and decorating materials to sell alcohol for mechanical and chemical uses only, the same to be sold in accordance with the provisions of this act.

Sixth. Sixth class.—To sell malt liquor, cider or light wines to be drunk on the premises, to be issued only to keepers of railroad restaurants.

Seventh. Seventh class.—To sell liquor of any kind to be drunk on the premises, to be issued only to associations, as provided in sub-division 7 of section 8, in the discretion of the board of license commissioners.

Eighth. Eighth class.—To distillers, brewers and bottlers to sell their product in packages for shipment or distribution to the trade.

Serving liquor at tables. No licensee of the first, second or fourth class shall serve any liquor at a table or tables in any room where the exclusive or principal business carried on is the sale of liquor. Each license of the first four classes shall specify the room or rooms in which liquor shall be kept or sold, and no liquor shall be kept or sold in any room or part of a building not so specified.

Sale of cider. No license shall be required for the sale of cider in greater quantities than ten gallons, or by the manufacturer at the press or in an unfermented state.

Expiration of licenses. All licenses granted prior to May 1, 1904, shall expire on that date, all licenses after May 1, 1904, shall expire May 1 of the following year, and all licensees shall pay for the time from date of issue to the first day of the May following.

License fees. **SECT. 7.** Fees for licenses shall be as follows:

First class, \$25 to \$1,000. First class.—Not more than \$1,000 nor less than \$25 per year, and the state board of license commissioners are hereby authorized and empowered to fix the fee and restrict, define and limit each license of the first class in their discretion, *provided, however*, no licensee of the first class, in a no-license city or town shall sell or serve liquor except to *bona fide* registered

guests who have resorted to his hotel for food or lodging. Such licensee shall not sell liquor to any resident of the city or town in which his hotel is situated neither shall he maintain or keep a barroom or bar at which liquor is sold. Hotel regulations in no-license towns.

Second class.—In cities having a population of forty thousand or over, twelve hundred dollars. Second class,
\$250 to \$1,200.

In cities having a population of from eighteen thousand to forty thousand, eight hundred dollars.

In cities having a population of from ten thousand to eighteen thousand, six hundred dollars.

In cities having a population of under ten thousand, four hundred dollars.

In towns whose population exceeds twenty-five hundred, three hundred dollars.

In all other towns, two hundred and fifty dollars.

Third class.—In cities of over forty thousand people, eight hundred dollars. Third class,
\$100 to \$800.

In cities having between eighteen thousand and forty thousand people, six hundred dollars.

In cities having between ten and eighteen thousand people, three hundred dollars.

In cities having a population of less than ten thousand, two hundred dollars.

In towns whose population exceeds twenty-five hundred, one hundred and fifty dollars.

In all other towns, one hundred dollars.

Fourth class.—In cities of over forty thousand people, six hundred dollars. Fourth class,
\$150 to \$600.

In cities of from eighteen thousand to forty thousand, five hundred dollars.

In cities of from ten thousand to eighteen thousand people, four hundred dollars.

In cities having less than ten thousand people, two hundred and fifty dollars.

In towns whose population exceeds twenty-five hundred, two hundred dollars.

In all other towns, one hundred and fifty dollars.

Fifth class.—Ten dollars per year.

Fifth class,
\$10 per year.

Sixth class,
\$50 to \$200.

Sixth class.—Not more than two hundred nor less than fifty dollars per year, and the state board of license commissioners are hereby authorized and empowered to fix the fee for each license of the sixth class in their discretion.

Seventh class,
\$100 to \$300.

Seventh class.—Not more than three hundred dollars nor less than one hundred dollars per year, and the state board of license commissioners are hereby authorized and empowered to fix the fee for each license of the seventh class in their discretion.

Eighth class,
\$300 to \$2,000.

Eighth class.—Not more than \$2,000 nor less than \$300 per year, and the state board of license commissioners are hereby authorized and empowered to fix the fee for each license of the eighth class, in their discretion, having regard to the quantity of product.

Certain persons not to receive licenses.

SECT. 8. No person shall receive a license under the provisions of this act

1. Who has been or shall be convicted of a a felony, or knowingly has in his employ a person who has been so convicted;

2. Who is under the age of twenty-five years;

3. Who is not a citizen of the United States, and a resident of the state of New Hampshire and of the town or city or the adjoining town or city within which he desires to carry on the liquor business, for one year last prior to the filing of his application;

4. Who shall be convicted of a violation of this act, until three years from the date of such conviction;

5. Whose agent or employee shall be twice convicted of a violation of this act, until five years from the date of the second conviction;

6. No co-partnership, unless one or more of the members of such co-partnership, owning at least one-half interest in the business thereof, shall be a resident of this state and a citizen of the United States;

7. No corporation or association hereafter organized under chapter 147, Public Statutes, and the acts amendatory thereof, unless the same shall be equipped to furnish food and lodging to its members;

8. No person who, as owner or agent, shall suffer or permit any gambling to be done in the place designated by the license as that in which the traffic in liquor is to be carried on, or in any other place appertaining thereto or connected therewith, or suffer or permit such premises to become disorderly, or carry on or permit to be carried on, or is interested in any traffic, business or occupation, the carrying on of which is a violation of law.

9. All applicants for a license in classes in which the fee is definite in this act shall deposit with said board the full amount of the license fee with the application and in classes in which said board has a discretion as to the amount of the fee such sum as said board shall direct. In case the license is denied the amount so paid shall be refunded. All applications shall be in form prescribed by said board. No person who shall not, within ten days from the receipt of notice from said board of the granting of his application for a license, file with said board a bond in the sum of double the amount of the license fee paid by him, *provided however*, no bond shall be accepted for a less amount than five hundred dollars, satisfactory to said board, conditioned upon constant adherence to the terms of said license and the provisions of this act, and recoverable in an action of debt to be brought by county solicitors upon complaint of said board shall be given such license.

SECT. 9. No license shall be granted for the traffic in liquor in any building which shall be on the same street or avenue within two hundred feet of a building occupied exclusively as a church or a schoolhouse, the measurements to be taken in a straight line from the center of the nearest entrance to the building used for such church or school to the center of the nearest entrance to the place in which the traffic in liquor is desired to be carried on, or in any location where the traffic shall be deemed by said board of license commissioners detrimental to the public welfare, *provided*, that this restriction shall not apply to hotels or drug stores used as such on the first day of January, 1903.

Applicant to
deposit
amount of
fee and file
bond.

Building
within 200 feet
of church or
schoolhouse
not to be
licensed.

Bond of clerk and treasurer of board; disposition of fees; records open for inspection; audit of accounts.

SECT. 10. The clerk of the state board of license commissioners shall be also the treasurer of the board, and as such treasurer he shall file with the secretary of state a bond of an indemnity company licensed to do business in this state in the sum of fifty thousand dollars, the cost of which shall be chargeable to the expense of maintaining the office of the board, and conditioned for the faithful accounting of fees collected and forfeitures incurred under the provisions of this act. All such fees and forfeitures shall be paid to the treasurer of said board, who shall, annually, in the month of July, pay one half of the sum so received to the treasurer of the said city or town where the license was granted, and one half to the treasurer of the county in which said city or town is located, first, however, deducting the entire cost of maintaining the office of said board, including all salaries and all expenses attaching to the performance of their duties; also the sum of one thousand dollars, or as much thereof as may be needed to pay the necessary expenses of the state laboratory of hygiene incurred under the provisions of this act, and all expenditures shall be audited by the governor and council. All moneys derived from fees and forfeitures in places where no town organization exists shall be paid to the treasurer of the county in which such place is located. The annual report of said board shall contain a statement by the treasurer of the board of the source from which all moneys received by him were derived, the names of licensees, and the classes of licenses, and the street and number in each city or town, when possible, where the licenses are exercised. The records of the state board of license commissioners and all applications for licenses shall be open at all times to the inspection of selectmen, mayors, police officers, prosecuting officers, sheriffs, and overseers of the poor. The accounts of the treasurer of the board shall be audited at such times and by such persons as the governor and council may direct, and the expense of such auditing shall be chargeable to the expense of maintaining the office of the license commissioners.

Transfer of licenses to other premises.

SECT. 11. If any person holding a license shall desire to transfer to and carry on such business for which the license

was issued, in other premises than those designated in the original application and in the license, but in the same city or town and in premises where the traffic in liquor is not forbidden by this act, upon the making and filing of a new application and bond in the form and in the manner provided for the original application and bond, said board shall write or stamp, over its signature, across the face of the license, the words, "The traffic in liquor permitted to be carried on under this license is hereby transferred from _____ to _____."

SECT. 12. The person to whom a license is issued, except a pharmacist, may sell, assign, and transfer such license during the time for which it was granted to any other person not forbidden to traffic in liquor under the terms of this act, who may thereupon carry on the business for which such license was issued, upon the terms prescribed by it, if such traffic is not prohibited by any of the terms of this act, during the balance of the term of such license, with the same liabilities as the original owner thereof, upon the making and filing of a new application and bond by the purchaser, in the form and manner provided for the original application and bond, and the presentation of the license to said board, who shall write or stamp across its face the words, "Consent is hereby given for the transfer of this license to _____;" *provided, however,* that no such sale, transfer or assignment shall be made except in accordance with the terms of this act. For each endorsement under the terms of section 11 or this section of this act, the applicant shall pay the sum of ten dollars, which sum shall be accounted for in the same manner as the original license fees.

SECT. 13. If a person holding a license under the provisions of this act shall die his heirs, executors or administrators may surrender said license to said board, *provided* that said license shall have at least one month to run, computed from the first day of the month following such surrender; and said license commissioners shall thereupon compute the amount of rebate then due upon such surrendered license for the unexpired term thereof, and the treasurer of said board shall imme-

Transfer of
licenses to
other persons.

Surrender of
license by ad-
ministrator,
etc.; rebate.

diately pay back said sum to the person authorized to receive it and shall credit himself with the amount so paid back.

Revocation of
licenses.

SECT. 14. At any time after a license has been issued to any person, the same may be revoked and cancelled by said board, if any material statement in the application of the holder of the same was false, or if any provision of this act is violated at the place designated in the said license by the holder of the same, or by his agents, servants, or any person whomsoever in charge of said premises. But before any license is revoked or cancelled, the holder shall be entitled to a hearing by said board, and to five days' previous notice thereof in writing, except that licenses of the first class may be revoked at any time, by said board, with or without notice, in their discretion.

Sale of liquor
to certain
persons pro-
hibited.

SECT. 15. No person shall sell, deliver, or give away, or cause or permit or procure to be sold, delivered or given away, any liquor

First, to a minor, nor to a minor for any other person ;

Second, to an intoxicated person ;

Third, to an habitual drunkard ;

Fourth, to any person where notice in writing has been given forbidding sale to such person from the parent, guardian, husband, or wife of such person, or by any magistrate or overseer of the poor of a town or city, or by any prosecuting attorney, or by any county commissioner, or by a selectman.

Hours and
days of sale
regulated.

SECT. 16. No licensee except the holder of a license of the first, fifth or seventh class shall sell, furnish, or expose for sale, or give away any liquor

First, on Sunday ;

Second, on any other day except between the hours of six in the morning and ten at night ; unless the town or board of mayor and aldermen of the city where such licensee carries on business shall extend the hours not later than eleven o'clock at night, which such town or board of mayor and aldermen is hereby authorized to do ;

Third, on the day of any general or city election or town meeting ;

Fourth, on a state or national legal holiday.

SECT. 17. It shall not be lawful

1. To sell or expose for sale, or to have on the premises where liquor is sold, any liquor which is adulterated with any deleterious drug, substance or liquid which is poisonous or injurious to the health.

2. To permit any girl or woman, or knowingly permit any person known to have been convicted of a felony, to sell or serve any liquor on the premises.

3. To have opened or unlocked any door or entrance from the yard, street, alley, hallway, room, or adjoining premises where the liquor is sold or kept for sale during the hours when the sale of liquor is forbidden, except for the egress or ingress of the holder of the license, his agents and servants, when necessary, for purposes not forbidden by this act; or to admit to such room or rooms any other persons during the hours when the sale of liquor is forbidden.

4. To have any screens or blinds, any curtains, or anything covering any part of any window, or to have in any part of any window or door any opaque or colored glass that obstructs or in any way prevents a person passing from having a full view from the sidewalk, alley, or road in front of the bar, or room in such building where liquor is sold or kept for sale; or to traffic in liquor in any interior room or place not having in the principal door or entrance to such room or place, a section of such door filled with clear glass so that a clear and unobstructed view of the bar and room where the liquor is sold and kept for sale can be had. And it shall be unlawful to have at any time in the room or place where liquor is sold, any enclosed box or stall, or any obstruction which prevents a full view of the entire room by every person therein. The provisions of this section shall not apply to licenses under the first and fifth and seventh classes.

SECT. 18. No recovery shall be had in any civil action to recover the purchase price of any sale or credit of any liquor sold to be drunk on the premises where the same shall be sold. All securities for such debt shall be void. Any person taking such security with intent to evade the provisions

Sale of adulterated liquor prohibited; liquor not to be served by female, etc.; doors to be closed when sale forbidden; use of screens, etc., prohibited; view of room to be unobstructed.

No recovery for liquor sold to be drunk on premises; penalty for taking security.

of this section shall forfeit a penalty of fifty dollars for each offense.

Suspension of licenses by town and city officers; penalty for violation.

SECT. 19. The mayor of a city and the selectmen of a town may, in case of riot or great public excitement, order persons who hold licenses of the first four classes or of the sixth or seventh class not to sell, give away, or deliver any liquor on the licensed premises for a period not exceeding three days at any one time. Whoever, by himself or by his agents or servants, violates such an order, shall be punished by a fine of two hundred dollars for each offense, and upon conviction he shall forfeit his license.

Certain licenses not to be exercised in dwelling-house.

SECT. 20. No license of the second, third or fourth class shall be granted to be exercised in a dwelling-house, but such a license may be exercised in a store or shop having no interior connection or means of connection with a dwelling or tenement of any family. No license of the second or fourth class shall be granted to be exercised in any building other than on the street floor.

Certain persons may enter to inspect; samples may be taken; penalty for adulteration.

SECT. 21. Any commissioner, police officer, constable, special agent, selectman or sheriff may at any time enter upon the premises of a person who is licensed under the provisions of this act, to ascertain the manner in which such person conducts his business, and to preserve order. Such officers may at any time take samples for analysis of any liquor kept on such premises, and the vessels containing such samples shall be sealed on the premises of the vender, and shall remain so sealed until presented to the state laboratory of hygiene for analysis. The city or town in which such vender resides shall pay for the samples so taken, if such liquor is found to be of good quality and free from adulteration. If, however, such liquor shall prove to be adulterated with any deleterious drug, substance or liquid which is poisonous or injurious to the health, or if such liquor prove to be other than it purports to be, the licensee shall be fined two hundred dollars, shall forfeit his license and his bond thereon, and such license shall not be renewed for at least three years from the date of its forfeiture.

SECT. 22. Retail druggists and apothecaries shall not sell liquor for medicinal, mechanical, chemical or sacramental purposes except upon the certificate of the purchaser, which shall state the use for which it is wanted, and which shall be immediately cancelled at the time of the sale in such a manner as to show the date of the cancellation. They shall not, when making such sales, upon the prescription of a physician, be subject to the provisions of section 16 of this act. Druggists holding a license of the fifth class may make application for a license of the third class, and may hold such license if granted, in any city or town where this act is in force.

SECT. 23. Every retail druggist and apothecary shall keep a book in which he shall enter at the time of every such sale, the date thereof, the name of the purchaser, the quantity, and the price of said liquor, the purpose for which it was sold, and the residence by street and number, if such there be, of said purchaser. If such sale is made upon the prescription of a physician, the book shall also state the name of the physician, and shall state the use for which said liquor was prescribed and the quantity to be used for such purpose, and shall be cancelled in like manner as the certificate hereinbefore mentioned. Said book shall be in form substantially as follows:

Sales by
druggists
regulated.

Druggists to
keep record;
form of record
and certifi-
cate.

Date.	Name of Purchaser.	Residence.	Kind and Quantity.	Purpose of Use.	Price.	Name of Physician.
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The certificate shall be in form substantially as follows:

CERTIFICATE.

I wish to purchase ——— and I certify that I am not a minor and that the same is to be used for medicinal mechanical chemical or sacramental purposes. (Draw a line through the words which do not indicate the purpose of the purchase.)

———— Date of sale and cancellation.

———— Signature of purchaser.

Books, certificates, etc., open to inspection.

SECT. 24. The book, certificates, and prescriptions provided for in the preceding section, and the book provided for in the same section shall be at all times open to the inspection of the commissioners and special agents hereinbefore mentioned, the mayor and aldermen, selectmen, overseers of the poor, sheriffs, constables, and police officers.

Fraudulent certificate or prescription; penalty.

SECT. 25. Whoever makes or issues a false or fraudulent certificate or prescription referred to in section 23 shall be punished by a fine of ten dollars.

Fraudulent druggist's license; penalty for sale under.

SECT. 26. Whoever, not being a registered pharmacist, procures a license of the fifth class in the name of a registered pharmacist who is dead, or in the name of a registered pharmacist by borrowing, hiring, or purchasing the use of his certificate, and who, himself being the owner and manager of the place, shall, himself or by his agents or servants, sell liquor, shall be punished by a fine of not less than fifty nor more than five hundred dollars, and by imprisonment for not less than one nor more than six months.

Notice not to sell to habitual drunkard; civil liability for sale after notice.

SECT. 27. The husband, wife, parent, guardian, or employer of a person who has the habit of drinking intoxicating liquor to excess, or the mayor of the city or one of the selectmen of the town, in which such person lives, may give notice in writing, signed by him or her, to any person requesting him not to sell or deliver such liquor to the person having such habit. If the person so notified, at any time within twelve months thereafter, sells or delivers any liquor to the person having such a habit, or permits him to loiter on his premises, the person giving the notice may, in an action of tort, recover of the person notified, not less than one hundred nor more than five hundred dollars, as may be assessed as damages; but an employer who gives such notice shall not recover unless he is injured in his person or property, and a druggist or apothecary shall not be liable hereunder for a sale made upon the prescription of a physician. A married woman may bring such action in her own name, and all damages recovered by her shall inure to her separate use. A mayor or selectman may bring such an action in his own name for the benefit, at his election, of either the husband, wife, child, parent, or guardian

of the person having such habit. Upon the death of either party or of the person beneficially interested in the action, the action and right of action shall survive for the benefit of his executor or administrator.

SECT. 28. The state board of license commissioners are hereby authorized and empowered to prescribe regulations for the conduct of the traffic in liquor under any license of the first class, as they may see fit, and whoever violates any such regulation, or any provision of this act or of his license, whatever its class, shall, unless otherwise expressly provided, be punished by a fine of one hundred dollars, the forfeiture of his license and the bond thereon, and by imprisonment for not more than sixty days. Such licensee shall be disqualified to hold a license for three years after his conviction, and if he is the owner of the licensed premises no license shall be issued to be exercised on the premises described in the license during the residue of the term thereof.

Regulations under first class licenses to be prescribed by board; penalty for violation.

SECT. 29. Upon the trial of a complaint or indictment for keeping intoxicating liquor for sale or for being a common seller of intoxicating liquor, evidence that the respondent exposes or suffers to be exposed in, upon, or about his place of business, bottles or other articles labeled with the name of any kind of intoxicating liquor, or a coupon receipt showing the payment of a special tax to the United States government, as a retailer in liquors, shall be received by the court and shall be deemed *prima facie* evidence of the commission of the offense with which the respondent stands charged.

What deemed *prima facie* evidence of sale.

SECT. 30. Every false statement made knowingly in any application for a license by the applicant therefor shall be deemed to be perjury.

False statements in application.

SECT. 31. From and after the third Tuesday of May, 1903, it shall be lawful to engage in the traffic in liquor, under the terms of this act, in all cities and towns in the state as shall have accepted by a majority vote of its legal voters present and voting the provisions of this act as herein provided. The officers of every city or town whose duty it is to call a special meeting of the legal voters of their respective cities or towns shall call a meeting according to the statutes made and pro-

Acceptance of license provisions by popular vote; sense of voters to be taken, when and how; result to be certified to board.

vided, on the second Tuesday of May next, at which special meeting and at each biennial election thereafter in November in the towns and in the cities at the biennial election in 1906 and every fourth year thereafter the sense of the voters shall be taken by secret ballot upon the following question: "Shall licenses for the sale of liquor be granted in this city or town under the provisions of 'An act to regulate the traffic in intoxicating liquor,' passed at the January session of the General Court, 1903?" If a majority of the qualified voters in any city or town present and voting at said town or city election, shall vote in the affirmative on said question, the clerk of the city or town shall immediately certify that fact to the state board of license commissioners, who shall forthwith issue licenses under the provisions of this act to be exercised in such city or town. In case a majority of the qualified voters of a city or town present and voting at such elections shall vote in the negative on said question the clerk of the city or town shall immediately certify that fact to the state board of license commissioners and in such city or town the provisions of chapter 112, Public Statutes, and all amendments thereto shall remain in full force and effect. Except that the state board of license commissioners may issue licenses of the first, fifth, and sixth classes in their discretion to be exercised in such city or town under the provisions of this act.

Increase of
license fee by
town or city.

SECT. 32. Any city by vote of its city councils and any town where this act is in force may by major vote raise the license fee for such city or town above the fee named in this act, but not above the maximum fee of the class upon which action is taken, and whenever a city or town shall thus raise the fee, the fee thus fixed shall remain in force in such city or town until the city or town acts again upon the subject matter of license under the provisions of this act.

Violations in
license town;
penalty.

SECT. 33. Whoever, in a city or town wherein the provisions of this act are in force, shall sell or keep for sale, liquor contrary to the provisions of this act, shall be punished by a fine of two hundred dollars and by imprisonment for not less than one month nor more than two years.

SECT. 34. The state board of license commissioners shall require the clerk of the board to furnish at the end of each month to the clerk of each city or town in which licenses are granted a complete and accurate list of the names of all persons to whom licenses have been granted in such city or town during the month, with street and number or location designated in the license; and such lists shall be open to public inspection in the office of the clerk of the city or town.

Board to furnish to cities and towns list of licenses therein.

[Approved March 27, 1903.]

SIXTIETH
ANNUAL REPORT
OF THE
RAILROAD COMMISSIONERS
OF THE
STATE OF NEW HAMPSHIRE.
1904.

PRINTED BY THE JOHN B. CLARKE COMPANY, MANCHESTER.
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PART I.

REPORT OF COMMISSIONERS.

STATE OF NEW HAMPSHIRE.

To His Excellency the Governor:

The Railroad Commissioners transmit herewith, in accordance with law, their report for the year 1904. It includes the returns of the railroad corporations of the state for twelve months ending June 30, 1904, and the reports, decisions, and comments of the board for ten and one half months of the calendar year.

HENRY M. PUTNEY,
ARTHUR G. WHITTEMORE,
GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

CONCORD, January 2, 1905. *

REPORT.

In order that it may be presented to the legislature when it assembles in January, this report is sent to the printer November 15. Consequently it contains the findings, decisions, orders, and recommendations of the board for but ten and a half months of the calendar year 1904, and these are much less in number than those for any corresponding period since the commission was created twenty years ago. No new charters have been petitioned for. No new roads have been built. There have been no extensions of existing lines. Few differences have arisen between the railroad corporations and the patrons as to fares, accommodations, or other matters which might properly come before the board, and, as usual, most of those that have appeared have been adjusted without formal hearings or orders. There have been no extraordinary fatal accidents, and the railroad business of the state has moved along in the usual channels without friction or notable change.

STEAM ROADS.

VOLUME OF BUSINESS AND FINANCIAL RESULTS.

The following table taken from the return of the Boston & Maine for the year ending June 30, 1904, shows the business of the year and also of the next preceding year.

EARNINGS.	1904.	1903.
From Passengers.....	\$12,338,181.53	\$12,116,114.51
From Extra Baggage and Storage.....	148,453.73	149,288.77
From Expresses.....	1,027,086.51	927,748.11
From Mails.....	457,551.45	454,446.92
<i>Total Passenger Earnings.....</i>	<u>\$13,971,273.22</u>	<u>\$13,647,598.31</u>
From Freight.....	\$20,363,605.38	\$19,524,177.05
From Switching.....	130,510.44	141,935.64
From Storage and Miscellaneous.....	239,841.36	223,781.10
From Grain Elevators and Stock Yards.....	54,822.12	75,563.59
<i>Total Freight Earnings.....</i>	<u>\$20,788,779.30</u>	<u>\$19,965,457.38</u>

From Steamers.....	\$22,669.34	\$20,303.71
From Telegraph.....	18,892.45	12,293.39
From Hire of Equipment.....	32,946.26	14,475.69
From Rents from Tracks, Yards and Terminals.....	60,047.62	78,855.78
<i>Total other Earnings from Operation.....</i>	<i>\$134,555.67</i>	<i>\$125,928.57</i>
<i>Total Earnings from Operation.....</i>	<i>\$34,894,608.19</i>	<i>\$33,738,984.26</i>
From Dividends on Stocks and Interest on Bonds...	\$238,548.40	\$202,157.40
From Rents of Tenements, etc.—Less Expense.....	274,877.34	266,287.84
From Interest received.....	36,019.53	37,760.85
From Miscellaneous Income—Less Expense.....	27,438.90	21,418.64
<i>Total Income from other sources.....</i>	<i>\$576,884.17</i>	<i>\$527,624.73</i>
<i>Gross Earnings.....</i>	<i>\$35,471,492.36</i>	<i>\$34,266,608.99</i>
Increase in Passenger Earnings.....	\$323,674.31	
Increase in Freight Earnings.....	823,321.92	
Increase in other Earnings from Operation.....	8,627.10	
Increase in Income from other sources.....	49,259.44	
<i>Total Increase in Earnings.....</i>	<i>\$1,204,883.37</i>	

OPERATING EXPENSES.

Maintenance of Way and Structures	\$3,828,702.49	\$3,667,993.28
Maintenance of Equipment	3,295,832.33	3,006,936.02
Conducting Transportation.....	16,975,565.49	16,681,457.73
General Expenses.....	820,819.14	806,615.20
New Equipment.....	350,988.18	170,369.57
<i>Total Operating Expenses.....</i>	<i>\$25,271,907.63</i>	<i>\$24,233,371.80</i>
Increase in Operating Expenses	\$1,038,535.83	
The number of Passengers carried during the year was.....	40,257,301	
An increase of	1,208,143	
Number of Passengers carried One Mile, not including Street Railways.....	681,938,257	
An increase of	3,692,593	
Number of Tons of Freight carried during the year was.....	19,395,452	
An increase of	310,656	
Number of Tons carried One Mile	1,728,422,684	
An increase of.....	2,393,508	

As shown in the Boston & Maine comparative tables the operations for the fiscal year covered by this report resulted in an increase in gross income of \$1,204,883.37, of which \$222,067.02 was derived from passengers carried, \$823,321.92 from freight traffic, and \$159,494.43 from other traffic and from miscellaneous sources. There was a gain of 1,208,143 in the number of passengers, and of 310,656 in tons of freight carried.

At the beginning of the fiscal year, in common with the managements of transportation companies and other large business enterprises throughout the country, the directors found it necessary to authorize material and general advances in wage schedules in every department of the service. These changes

produced a total increase in the year's operating payrolls of \$880,806.00. The high cost of locomotive fuel incident to the coal strike of last year continued during the earlier months of this fiscal year and resulted in a total expenditure for the year, for this item alone, of not less than \$600,000.00 in excess of that required under normal conditions. There was a decrease of \$159,000.00 in the year's balance paid to other roads for car service interchange, and a material return toward lower and more normal prices of materials and supplies used in maintenance and operation, and the net increase in the year's operating cost was \$1,038,535.83, so that the gratifying resultant was an increase in divisible earnings of \$166,347.54, which is partially accounted for by a slight increase in freight rates, averaging forty-seven one hundredths of one mill per ton per mile upon all the merchandise transported.

The Maine Central exhibit is:

RECEIPTS.	1904.	1903.
Passenger Revenue.....	\$2,360,459.39	\$2,300,392.11
Extra Baggage.....	40,582.56	38,296.47
Mails.....	187,587.05	187,122.69
Express.....	126,661.04	110,183.21
Miscellaneous.....	13,176.51	11,387.35
<i>Total Passenger Department.....</i>	<i>\$2,728,466.55</i>	<i>\$2,647,381.83</i>
Freight Revenue.....	\$4,019,831.68	\$3,871,614.18
Freight Switching.....	22,912.53	20,150.52
Miscellaneous.....	2,349.52	2,013.73
<i>Total Freight Department.....</i>	<i>\$4,045,093.73</i>	<i>\$3,893,778.43</i>
<i>Total Transportation Earnings.....</i>	<i>\$6,773,560.28</i>	<i>\$6,541,160.26</i>
Rent of Road.....	27,800.00	27,800.00
Rent of Real Estate.....	13,589.60	13,365.04
Wharfage and Pierage.....	30,495.93	27,953.10
Baggage Storage.....	3,667.85	4,523.15
Freight Storage.....	17,556.87	18,030.18
Steamboat Earnings.....	59,697.04	50,523.13
Income from Investments.....	11,902.60	7,527.60
Interest and Discount.....	53,147.91	36,482.29
Miscellaneous.....	3,203.73	7,120.04
<i>Total Receipts.....</i>	<i>\$6,991,621.81</i>	<i>\$6,724,434.79</i>
Increase in Receipts from Passenger Department, including Mail and Express.....	\$81,084.72	
Increase in Receipts from Freight Department.....	151,315.30	
Increase in Other Income.....	24,737.00	
<i>Total Increase in Receipts.....</i>	<i>\$257,137.02</i>	

EXPENDITURES.

General Expenses of Office and Property.....	\$209,199.52	\$180,833.01
General Expenses of Transportation.....	286,730.40	245,217.64
Passenger Transportation Expenses.....	382,922.40	377,082.54
Freight Transportation Expenses.....	594,498.50	587,725.12
Motive Power Expenses.....	1,520,234.32	1,433,292.53
Maintenance of Cars.....	276,307.10	262,728.94
Maintenance of Way and Structures.....	1,091,414.20	1,153,466.41
New Equipment.....	740,236.91	641,920.33
<i>Total Operating Expenses</i>	<u>\$5,101,543.35</u>	<u>\$4,882,266.52</u>
Increase in Operating Expenses.....	\$219,276.83	
Net Receipts.....	<u>\$1,890,078.46</u>	<u>\$1,852,218.27</u>
Increase in Net Receipts.....	\$37,860.19	

FIXED CHARGES.

Taxes.....	\$240,000.00	\$226,589.52
Interest on Debt.....	643,110.00	643,110.00
Rent of Leased Roads.....	545,875.76	545,875.76
Sinking Fund Payments.....	29,440.00	29,440.00
<i>Total Fixed Charges</i>	<u>\$1,458,425.76</u>	<u>\$1,445,015.28</u>
Increase in Fixed Charges.....	\$13,410.48	
Balance Available for Dividends.....	\$431,652.70	
Dividends Declared.....	348,348.00	
Surplus for year.....	83,304.70	
Decrease in Surplus for the year after deducting all charges and dividends.....	<u>\$25,323.29</u>	

From the foregoing statement it will be seen that the company's receipts from all sources increased during the fiscal year \$257,137.02, of which \$81,084.72 was derived from the passenger department, \$151,315.30 from the freight department, and \$24,737.00 from miscellaneous sources.

There was an increase in operating expenses of \$219,276.83, of which \$170,373.86 was due to general advances in wages paid the company's employees. The year's pay-rolls amounted to \$2,421,449.36, an equivalent of 47.47 per cent. of the entire year's operating expenses and 34.63 per cent. of the company's gross income from all sources.

The gross earnings of the Atlantic & St. Lawrence for the year ending June 30 were \$1,215,630.05 as against \$1,408,329.38, the next preceding year, the falling off being due to the great decrease in the export trade from Portland. The passenger receipts were \$354,552.15 as against \$327,173.25 in 1903, but the freight earnings decreased from \$1,078,395.40 last year to \$858,071.50 this.

The operating expenses and fixed charges were \$1,382,-396.47 in 1904 and \$1,487,686.88 in 1903.

As the road is leased to the Grand Trunk at 6 per cent. upon a capitalization of \$5,484,000.00 or \$329,040.00, which is more than it ever earns, it always shows a deficit to be supplied by the lessee, which pays in this way for the advantages it derives from having an outlet to tide water.

PHYSICAL CONDITION.

The board has inspected the steam roads, in company with their managers, without discovering in this state any extensive or expensive permanent improvements in their road beds, tracks, structures, or equipment beyond what is incidental to the execution of a policy which calls for such constant betterments as is necessary to enable them to handle a constantly increasing volume of business at a minimum of cost and can be afforded from the revenues.

Nevertheless it can be said that all these roads are in better physical condition than they were a year ago, or have ever been before. The Grand Trunk, as the lessee of the Atlantic & St. Lawrence, has within a few years practically rebuilt its line so as to carry safely and economically its business between Montreal and Portland, and the section which crosses New Hampshire has received its share of this reconstruction.

The Boston & Maine has rebuilt its road from Rochester to Portland, Maine, but, as only three miles are in New Hampshire, it does not figure much in the expenditures in this state. The improvements at North Walpole, which included the elimination of the dangerous grade crossings and the reconstruction of the yards in that village, have been nearly completed.

MILEAGE.

The steam railroads of New Hampshire have a total length of line of 1190.46 miles, of which 1012.96 miles are operated by the Boston & Maine; 100.12 by the Maine Central; 52.19 by the Grand Trunk, and 25.19 by the Sullivan County.

Their double tracks are 81.28 on the Boston & Maine, and 17.40 on the Sullivan County. Their sidings measure 528.08 miles, making the length of all their tracks 1817.22 miles.

RAILROAD OWNERSHIP.

On June 30, 1904, there were shares of New Hampshire steam railroad stocks, of a par value of \$100 each, owned by corporate and individual residents of the state, as follows:

	No. Stockholders.	No. Shares.
Boston & Maine.....	1,505	27,217
Concord & Claremont.....	7	4,092
Concord & Portsmouth.....	168	3,182
Connecticut River	28	682
Concord & Montreal.....	1,546	60,673
Fitchburg	684	8,168
Franklin & Tilton.....	2	2,500
Maine Central	62	1,775
Manchester & Lawrence.....	282	5,600
Mt. Washington	2	2,115
Nashua & Lowell	149	1,900
Northern	1,164	15,180
Pemigewasset Valley	144	4,012
Peterborough & Hillsborough.....	1	450
Peterborough	285	2,847
Sullivan County	5	5
Suncook Valley	188	3,242
Upper Coos	13	1,146
Wilton	202	1,992
Worcester, Nashua & Rochester.....	190	2,207
	<hr/> 6,627	<hr/> 148,985

As the market value of these stocks is at least \$175 a share, the investments of New Hampshire people in them total more than twenty-six million dollars. Many of these stocks are owned by savings banks, insurance companies and other financial institutions, as are also large amounts of the bonds of our

railway corporations, so that directly and indirectly a majority of our citizens who have saved money may be said to have some part of their capital invested in home railway securities.

THE ELECTRICS.

The returns of the electric railway corporations do not disclose the hoped for improvement in their balance sheets. The reduction of the cost of coal to normal prices and some economies in operation, which managers have been able to bring about, have to a small extent lessened the expenses on some roads, but the fact remains that, excepting the Concord, which has but nominal fixed charges, the Manchester, which serves about 70,000 people, and the Chester & Derry, which is practically owned by a few men who operate it, charging little or nothing for their services, no street railway in New Hampshire earned operating expenses and fixed charges.

Corporations that operate eighteen electric railways made returns to the board as of June 30.

The Springfield is a New Hampshire terminal of a Vermont road, and reports neither expenses nor receipts. The Portsmouth, Dover & York is a Maine road with less than three miles of track in this state. The Claremont is operated in connection with light and power plants in whose accounting its balance sheet is merged. The Nashua is leased to the Boston & Northern of Massachusetts, operated as a part of that system, and its returns are necessarily estimates, which disclose its volume of business and little more. Of the other fourteen, three, as stated above, earned a divisible income; five did not take money enough to pay operating expenses, and six failed to pay for operation and fixed charges.

The aggregate deficits of these eleven roads for the year was \$95,028.17, and the sum of the divisible incomes of the other three was \$50,149.10, leaving an excess of deficits of \$44,879.07. This result was undoubtedly mainly due to unfavorable weather. To a much greater extent than in states where there are many large cities and people are employed so far from their homes that they must ride back and forth the business

of our roads depends upon climatic conditions. Not one of their patrons in fifty is absolutely obliged to patronize them. The bulk of their traffic is pleasure travel, and a large share of the remainder comes from people who can remain at home if they so elect. There is very little pleasure riding in bad weather, and only those who feel obliged to go abroad in storms. More important perhaps than this is the fundamental fact that our state lacks the populous centers which are a guaranty of the income of an electric road. The average community can be relied upon to pay from three to four dollars per capita for street railway service, and when this will not support a road dependent upon local patronage it can not prosper.

The following table is compiled from the returns:

STREET RAILWAY STATISTICS.

	Miles of Track in N.H.	Stock.	Bonds.	Current Liabili- ties.	Gross Income.	Operating Expenses.	Fixed Charges.	Deficit or Divisible Income.	No. Five Cent Fare.
Berlin.....	7.75	\$110,000.00	\$105,000.00		\$ 40,876.31	\$38,262.33	\$5,988.33	\$3,374.35	732,113
Chester & Derry.....	7.75	50,000.00	50,000.00	\$4,511.73	13,719.27	8,791.86	2,918.71	\$2,008.70	234,544
Concord and Concord & Manchester.....	27.88	1728,200.62			148,348.62	139,967.06	3,622.16	\$4,758.80	2,877,993
Dover, Somersworth & Rochester.....	17.744	300,000.00	300,000.00	122,321.36	83,069.90	61,096.90	37,611.64	\$15,638.64	1,637,805
Exeter, Hampton & Amesbury.....	21.606	275,000.00	225,000.00	288,955.38	47,296.07	43,878.65	13,627.94	\$10,210.52	884,120
Haverhill, Plaidstow & Newton.....	8.474	160,000.00	145,000.00	81,178.44	31,325.90	32,876.88	16,910.00	\$18,459.98	623,935
Hudson, Pelham & Newton.....	29.725	375,000.00	365,000.00	303,245.71	83,905.69	88,811.41	18,250.00	\$23,155.72	1,656,926
Keene.....	8.584	140,000.00	80,000.00	59,331.63	26,843.94	23,694.11	6,914.32	\$3,764.49	530,223
Laconia.....	8.87	124,000.00	90,000.00	69,097.75	25,867.10	19,645.41	8,332.30	\$2,130.61	500,898
Manchester.....	35.622	694,500.00	250,000.00	81,662.47	255,827.30	222,747.55	19,698.15	\$43,381.60	5,572,719
Nashua.....	15.169	300,000.00	150,000.00	33,630.16	72,286.31	52,177.62	8,650.38	\$11,458.31	1,387,500
Portsmouth.....	19.29	\$474,661.25			66,487.41	70,052.74		\$13,565.33	1,315,197
Portsmouth & Exeter.....	12.236	165,000.00	145,000.00	27,917.71	18,425.63	24,899.07		\$13,723.44	305,937
Seabrook & Hampton Beach.....	5.504	55,000.00	45,000.00	13,725.67	16,960.69	9,445.78	8,550.00	\$1,005.69	339,274
Springfield.....	2.25	12,000.00							
<hr/>									
New Roads	229.754	\$3,963,361.00	\$1,950,000.00	\$876,178.21	\$961,269.54	\$836,346.37	\$158,343.93		18,620,154
* Claremont	5.33	90,000.00	75,000.00						233,216
† Portsmouth, Dover & York	2.893								1,747,019
<hr/>									
									20,600,389
Total Deficits,									\$95,028.17
Total Divisible Incomes,									61,697.41
Excess of Deficits,									\$33,426.76

* Incomplete report.

† A Maine Road.

‡ Two returns combined.

§ Cost of roads.

|| Deficit.

¶ Divisible income.

THE MANCHESTER.

The Manchester Street Railway stands out conspicuously as the only one in New Hampshire that earns and pays regular dividends, which is mainly due to the fact that there are within reach of its lines about 70,000 people, who contribute an average of four dollars per capita to its receipts. It has nearly thirty-seven miles of track, is well built and equipped, has upon its route several attractive parks, is well supplied with car barns, and is liberally managed.

Its cost in round numbers was a million dollars, for which it could not be replaced. It is owned by a Traction Company with ample resources. It reports 6,764,336 passengers during the year and collected five cents each from 5,572,719, the others being represented by transfers, employees, and other free tickets.

THE PORTSMOUTH.

The Boston & Maine corporation owns and operates the Portsmouth Electric Railway in the city of Portsmouth and thence through Rye, and North Hampton to the Hampton town line, where it connects with the Exeter, Hampton & Amesbury, making a through line along the coast from Maine to Massachusetts, with a loop in Rye and another in North Hampton. It has 19.29 miles of track, and was well built and equipped at a cost of \$474,661.25. It has no fixed charges and its general expenses are nominal. Its cars are crowded in summer, but its winter patronage is small and its receipts for the year, which were \$66,487.41, were \$3,565.33 less than the bare cost of operation.

THE CONCORD AND CONCORD & MANCHESTER.

The Boston & Maine, as the lessee of the Concord & Montreal, operates the Concord, and Concord & Manchester electrics, which were consolidated November 30, 1903. Combined they have 27.88 miles of track reaching from Penacook Park through Concord, Pembroke, Allenstown, and Hooksett to a junction with the Manchester road at the Hooksett boun-

dary. The returns of the two roads are separate for the first five months of the year, but combined for the other seven. United they show: Gross earnings, \$148,348.02; operating expenses, \$139,966.06; fixed charges, \$3,622.16; divisible income, \$4,758.80.

THE LOVELL ROADS.

Nearly three and a half million dollars have been expended in acquiring and producing the six electric railways in southeastern New Hampshire, known as the Lovell system. They were extravagantly built, carelessly financed, and for a time managed with little regard to their balance sheets. Their tracks measure about ninety-five miles. Their stock is \$1,330,000, their bonds \$1,225,000, and their current liabilities are \$837,344.47, making a capitalization of \$3,392,000. Their gross income last year was in round numbers \$281,000, their operating expenses were \$261,000, and their fixed charges \$94,654, leaving a deficit of \$74,654. Under the present management the operating expenses have been largely reduced without depriving the public of facilities which it can reasonably expect from corporations staggering under such deficits. For a few months in summer they have a large and profitable business, but during the winter none earn operating expenses, and, with the closest economies, give no promise of yielding their owners any interest upon their cost.

THE LACONIA.

The physical condition of this road has been greatly improved, and it reports a gratifying increase in earnings, gross and net; its current liabilities have since its return was made been converted into stock and bonds, and its owners are bravely working and hoping to make it a paying proposition, but until now its benefits have been entirely to the people it has furnished with street railway transportation and its employees.

THE KEENE.

Sixty thousand dollars have been spent upon the Swanzey extension, which will be completed when it can be prudently

financed. With the addition it shows an increase of earnings and expenses, and also of deficit. Its only lack is one of population.

THE BERLIN.

With a largely increased business, the Berlin Street Railway reports a deficit of \$3,374.35, which is almost the same as that of 1903, but there is reason to believe that it has advantages which will in time overcome this and place its balance upon the right side. Its gross earnings are large, and when its operating expenses are reduced, as they can be, to a reasonable minimum it should be a paying enterprise.

THE CHESTER & DERRY.

As stated elsewhere, this is the only short road in the state that earns a divisible income, which is due to the economies of its operation. Its earnings thus far have been applied to cancelling its floating debts, which are not large, and its owners have a right to expect that in the near future their confidence will materialize in small dividends upon its stock.

THE UNCANOONUC INCLINE.

The grantees of a charter for an electric railway from Grasmere station in Goffstown to the top of Uncanoonuc Mountain have partially constructed a road from the station to the base of the mountain, a distance of about two and a half miles, and intend, if the necessary funds can be secured, to extend it to the summit next summer. When completed it will be for pleasure travel, and will be operated during the summer months only.

COMPARISONS.

All the electric railway corporations, which made returns as of June 30, 1904, were in operation in 1903 except the Claremont, which has been constructed during the past year, and the Portsmouth, Dover & York, which is a Maine enterprise, with a terminal in Dover. It is therefore possible to institute a comparison between the exhibits for the two years of all the

roads in the state other than those two. Such a comparison shows an increase of track mileage from 228.90 to 229.754, of stock from \$3,552,119 to \$3,963,361, a decrease of bonds from \$2,066,000 to \$1,950,000, and of current liabilities from \$1,109,003.64 to \$876,178.21, an increase of gross income from \$834,894.10 to \$961,269.54, of operating expenses from \$796,795.82 to \$836,346.37, of fixed charges from \$103,259.66 to \$158,343.93, a decrease of deficits from \$101,911.70 to \$95,028.17, an increase of divisible income from \$36,750.32 to \$61,607.41, and of five-cent fares on all but the Nashua from 15,051,421 to 18,620,154.

If the Claremont & Portsmouth, Dover & York be added the mileage is 237.977.

THE TRACTION COMPANIES.

MANCHESTER TRACTION, LIGHT AND POWER COMPANY.

The Manchester Traction, Light and Power Company, which owns the Manchester Street Railway and the Light and Power plants, and appurtenant properties from which light and power are supplied to the citizens of Manchester, Goffstown, Hooksett, Suncook and the Concord & Manchester Street Railway, reports a very successful year. Its gross earnings from operation were \$297,032.52, to which was added \$41,670.00 from the street railway, which is operated independently, making its income \$338,702.50. Its operating expenses were \$108,220.97, and its interest and tax charges \$82,486.53, a total of \$190,707.50, leaving a divisible income of \$147,995.02, from which 6 per cent. dividends on its stock amounting to \$120,255.50 were paid. Its surplus for the year was \$27,639.52. This company has recently acquired and developed the water power at Garvin's Falls at a cost of about half a million dollars, installing a model electric plant, which puts at its service for the future the Merrimack river at that point.

Its earnings were \$129,589.22 for commercial lighting, \$46,694.52 for municipal lighting, \$104,320.28 for power, and \$16,428.50 for rents.

Its liabilities are: Stock, \$2,050,000; funded debt, \$1,726,500, and bills payable, \$50,794.72.

THE NEW HAMPSHIRE TRACTION COMPANY.

The New Hampshire Traction Company was organized in November, 1901, under the laws of New Hampshire, for the purpose of taking over, holding and operating the properties of the Exeter, Hampton & Amesbury, the Amesbury & Hampton, the Haverhill, Plaistow & Newton, the Haverhill & Plaistow, the Seabrook & Hampton Beach, the Dover, Somersworth & Rochester, the Portsmouth & Exeter, the Hudson, Pelham & Salem, the Lawrence & Methuen, the Haverhill & Southern New Hampshire, and the Lowell & Pelham street railway companies, and the Rockingham County Light and Power, the Granite State Land and the Canobie Lake companies, all of which had been purchased or constructed with funds furnished by the New York syndicate which formed the Traction Company. The merging of these companies in one, which was effected by merely transferring the securities upon the books, did not change the real ownership, and was of little importance to the public, for their legal identity was preserved and they were managed as they had been previously, but their practical consolidation enables us to consider them as one as well as separately in this report.

So considered the Traction Company has done much for southeastern New Hampshire and northeastern Massachusetts. It has constructed and equipped the network of electric roads known as the Lovell system, with about one hundred and thirty miles of track; the Portsmouth power station, one of the best in the country, the large and costly structures at Hampton Beach, the Hampton River bridge, and the Seabrook Beach improvements, and the beautiful Canobie Lake Park, which is the favorite summer resort of great numbers of the citizens of both states, and it has done it all without asking for New Hampshire money. But it has been a financial failure from the beginning. Few of its constituent companies have shown any net earnings, and its annual balances have been an aggregation of deficits. In March, 1903, it had invested in its properties \$6,479,813.21, and on June 30 of that year it reported to the board that its liabilities were \$1,000,000 in stock, \$6.-

625,000 in bonds, \$1,196,096.49 in bills payable, \$1,924.10 in over drafts, \$17,326.65 in accrued interest and 385,283 in Canobie Lake accounts.

A year later, June 30, 1904, its liabilities, according to its report, were: Stock, \$1,000,000; bonds, \$6,625,000.00; bills payable, \$1,418,454.09; matured interest, \$36,630.00; interest coupons, \$261,495.00; interest accrued but not due, \$49,231.98; profit and loss special, \$380,217.70; total, \$9,771,028.77.

Its deficit for the fiscal year 1903 was \$326,597.29, and for 1904 it was \$395,892.94, making \$722,490.23.

To arrest this rapid descent into bankruptcy, a drastic plan of reorganization has been resorted to. This plan will be found in an appendix to this report. It provides in brief that the stock, bonds, certificates of indebtedness and current liabilities shall be cancelled, that the company shall issue four million dollars of preferred stock and four million dollars of common stock, the present bondholders to receive fifty per cent. of the face value of their holdings in each kind of the new stock and the holders of the certificates of indebtedness the full face value of their claims in new common stock.

This plan if consummated will wipe out the old stock and floating debts, convert the bonds into stock and leave the company without interest charges, and, with this relief and the expected increase in business, it is hoped it can proceed and work out its solvency.

THE CLAREMONT RAILWAY AND LIGHTING COMPANY.

The Claremont Railway and Lighting Company makes its first return this year. It owns and operates an electric railway with 7.68 miles of track in connection with its lighting plant, but as the accounts are not kept separately its return shows only the balance sheets of the two properties combined. According to this, its receipts were \$31,136.21, and its operating expenses were \$23,161.52, and its fixed charges were \$1,413.21, leaving a margin of \$7,463.48; but as the plants were in process of construction during the year and the interest on the bonded debt had not become due, and there were large

current liabilities, these figures convey very little idea as to the financial future of the enterprise. It appears that the road carried during the year 238,189 paying passengers, from whom it collected \$11,660.83, and received for freight \$2,408.68, for carrying mails \$88.99, and from advertising \$172.56, making \$14,331.06, but the return does not disclose the cost of doing the business. According to a statement filed with a petition asking the board to authorize an increase of stock, Oct. 12, 1904, the liabilities of the company were then \$370,000.

NEW CAPITALIZATION.

The deficits of the electric railways comprised in the Lovell system, owned and operated by the New Hampshire Traction Company, have necessitated new issues of stock, which the board has authorized. As the current liabilities of these roads were represented by notes given to the Traction Company in return for money furnished, and as this company took the new issues of stock at par, the new stock has simply represented a conversion of promissory notes into stock certificates, neither of which it appears have much market value.

The new stock authorized to cancel floating indebtedness is as follows:

Exeter, Hampton & Amesbury, eighty-five thousand dollars (\$85,000).

Dover, Somersworth & Rochester, seventy-five thousand dollars (\$75,000).

Seabrook & Hampton Beach, ten thousand dollars (\$10,000).

Portsmouth & Exeter, twenty thousand dollars (\$20,000).

Haverhill, Plaistow & Newton, sixty-five thousand dollars (\$65,000).

Hudson, Pelham & Salem, one hundred thousand dollars (\$100,000).

The board has also authorized the Concord & Montreal railroad to issue one hundred and fifty thousand dollars (\$150,000) of stock for the purchase and improvement of the Concord Street Railway, approved the issue of eighty thousand dollars (\$80,000) of coupon notes by the Keene Electric Railway for

the payment of its floating debts and to extend its line to Swanzev, of forty thousand dollars (\$40,000) of stock and forty thousand dollars (\$40,000) of bonds by the Laconia Street Railway to pay indebtedness incurred in constructing a power plant, changing its gauge and otherwise improving its property, and of two hundred and eighteen thousand dollars (\$218,000) of bonds to pay for permanent improvements, and of two hundred and fifty thousand dollars (\$250,000) of bonds to retire an equal amount of Manchester Street Railway bonds by the Manchester Traction, Light and Power Company.

TEST CASES.

The constantly increasing deficits upon the six electric roads embraced in the Lovell system, in New Hampshire, have constrained the managers to reduce, to some extent, the service and change the fare point or rates upon some of their lines. This has naturally displeased patrons, and what may be called test cases were brought before the board by a petition of citizens of Exeter and Stratham, asking that the Exeter & Portsmouth be required to restore the old rates and fare points, and by a petition of citizens of Rochester protesting against the winter schedule in that city, upon the Dover, Somersworth & Rochester. These cases are fully considered in the reports of the board printed elsewhere in this volume, and our opinions are stated therein.

RAILROAD TAXES.
VALUATION AND ASSESSMENT OF RAILROAD CORPORATIONS FOR 1904.

NAMES.	Valuation.	Amount taxed in towns.	Value for taxation.	Tax.
Boston & Lowell	\$60,000	\$9,500	\$50,500	\$838.50
Boston & Maine	4,125,000	160,000	3,965,000	67,405.00
Concord & Claremont	500,000	4,000	496,000	8,432.00
Concord & Montreal.....	7,550,000	131,000	7,419,000	126,123.00
Concord & Portsmouth.....	600,000	.....	600,000	10,200.00
Connecticut River	325,000	15,000	310,000	5,270.00
Fitchburg.....	1,635,000	34,000	1,601,000	27,217.00
Grand Trunk.....	360,000	11,500	348,500	5,924.50
Manchester & Lawrence	1,500,000	3,300	1,496,700	25,443.90
Mount Washington.....	125,000	25,000	100,000	1,700.00
Nashua, Acton & Boston	20,000	2,000	18,000	306.00
Nashua & Lowell.....	400,000	27,600	372,400	6,330.80

New Boston.....	25,000	.....	25,000	425.00
Northern	2,370,000	11,300	2,358,700	40,097.90
Pemigewasset Valley.....	160,000	.....	160,000	2,720.00
Peterborough	50,000	700	49,300	838.10
Peterborough & Hillsborough	50,000	.....	50,000	850.00
Portland & Ogdensburg	300,000	5,400	294,600	5,008.20
Sullivan County.....	750,000	.....	750,000	12,750.00
Suncook Valley	140,000	4,500	135,500	2,303.50
Upper Coös.....	80,000	500	79,500	1,351.50
Wilton	300,000	2,100	297,900	5,064.30
Worcester, Nashua & Rochester	1,200,000	13,900	1,186,100	20,163.70
Laconia Street Railway	35,000	10,000	25,000	425.00
Manchester Street Railway.....	330,000	.....	330,000	5,610.00
Nashua Street Railway.....	120,000	4,500	115,500	1,963.50
Dover, Somersworth & Rochester Street Railway.....	95,000	15,000	80,000	1,360.00
Total.....	\$23,205,000	\$490,800	\$22,714,200	\$386,141.40



PART II.

RAILROAD RETURNS.

REPORT

OF THE

ATLANTIC & ST. LAWRENCE RAILROAD COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Gross earnings from operation	\$1,215,630.05
Operating expenses	1,382,396.47
Net earnings from operation—deficit	\$166,766.42
Charges upon income accrued during the year:	
Interest on funded debt	\$206,280.00
Taxes	50,717.36
Total charges and deductions from income	256,997.36
Deficit	\$423,763.78
Dividends declared, 6 per cent on \$5,484,000, common stock	329,040.00
Deficit for the year ending June 30, 1904	\$752,803.78
EARNINGS FROM OPERATION.	
Net revenue from passengers	\$284,497.81
Mails	24,052.33
Express	46,002.01
Total earnings, passenger service	\$354,552.15
Total earnings, freight service	858,071.50
Total other earnings	3,006.40
Gross earnings from operation	\$1,215,630.05

EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers	\$8,092.60
Salaries of clerks and attendants	7,535.92
General office expenses and supplies	2,601.58
Insurance	5,413.74
Law expenses	3,994.35
Stationery and printing (general offices)	1,295.10
Other general expenses	1,782.61
Total	<u>\$30,715.90</u>
Maintenance of way and structures:	
Repairs of roadway	\$120,514.83
Renewals of rails	33,372.71
Renewals of ties	15,495.97
Repairs and renewals of bridges and culverts	14,078.21
Repairs and renewals of fences, road crossings, signs and cattle guards	15,259.86
Repairs and renewals of buildings and fixtures	134,207.22
Repairs and renewals of docks and wharves	9,988.65
Repairs and renewals of telegraph	69.39
Stationery and printing	68.89
Total	<u>\$343,055.73</u>
Maintenance of equipment:	
Superintendence	\$9,441.31
Repairs and renewals of locomotives	129,457.99
Repairs and renewals of passenger cars	18,141.88
Repairs and renewals of freight cars	63,681.87
Repairs and renewals of work cars	1,455.64
Repairs and renewals of shop machinery and tools	11,169.67
Stationery and printing	362.77
Other expenses of maintaining equipment	13,039.12
Total	<u>\$246,750.25</u>
Conducting transportation:	
Superintendence	\$4,601.39
Engine and roundhouse men	110,719.74
Fuel for locomotives	325,536.66
Water supply for locomotives	12,858.27
Oil, tallow, and waste for locomotives	8,879.56
Other supplies for locomotives	2,710.07
Train service	63,141.26
Train supplies and expenses	11,487.74
Switchmen, flagmen, and watchmen	37,141.49

Telegraph expenses	\$29,993.96
Station service	91,335.34
Station supplies	5,571.43
Car mileage—balance	21,187.64
Loss and damage	247.96
Injuries to persons	2,583.75
Clearing wrecks	2,044.97
Operating marine equipment	60.00
Advertising	4,460.41
Outside agencies	15,146.84
Commissions	3,136.29
Stock yards and elevators	2,033.17
Stationery and printing	3,187.80
Other expenses of conducting transportation	508.85
Total	<u>\$761,874.59</u>
Recapitulation:	
General expenses	\$30,715.90
Maintenance of way and structures	343,055.73
Maintenance of equipment	246,750.25
Conducting transportation	<u>761,874.59</u>
Total operating expenses	<u>\$1,382,396.47</u>
Percentage of operating expenses to gross earnings	113.73

GENERAL BALANCE SHEET.

Cost of road	<u>\$8,922,000.00</u>
Capital stock, common	\$5,484,000.00
Funded debt	<u>3,438,000.00</u>
Total	<u>\$8,922,000.00</u>

CAPITAL STOCK.

Capital stock authorized by law, common	\$5,484,000.00
Capital stock authorized by votes of company, common	5,484,000.00
Capital stock issued and outstanding, common	5,484,000.00
Number of shares issued and outstanding, common, sterling	11,290
Number of shares issued and outstanding, common, federal	190
Number of shares issued and outstanding, preferred, fractional (\$16)	40
Total number of shares outstanding	<u>11,520</u>
Number of stockholders, common	1,661

FUNDED DEBT.

DESCRIPTION OF BONDS, ETC.	Rate of interest.	Date of maturity.	Amount outstanding.	Interest paid during year.
First mortgage.....	6%	1884	\$1,499,916.00	\$89,994.96
Second mortgage	6%	1891	712,932.00	42,775.92
Third mortgage.....	6%	1909	786,984.00	47,219.04
Balance on exchange of bonds.	6%	.....	168.00	10.08
<i>Island Pond to Canadian Boundary Line.</i>				
Island Pond Debentures, £90,000 sterling	6%	.....	438,000.00	26,280.00
Total			\$3,438,000.00	\$206,280.00

VOLUME OF TRAFFIC, ETC.

Passenger traffic:

Number of passengers carried paying revenue .	416,379
Number of passengers carried one mile .	13,462,338
Number of passengers carried one mile per mile of road operated	85,957
Average length of journey per passenger, miles	32.33
Average amount received from each passenger	.68327
Average amount received per passenger per mile carried . . . . .	.02113
Passenger earnings (gross) per mile of road operated	2,264.35
Passenger earnings (gross) per passenger-train mile run . . . . .	.96294

Freight traffic:

Number of tons freight hauled earning revenue	1,566,443
Number of tons of freight hauled one mile .	167,597,530
Number of tons of freight hauled one mile per mile of road operated	1,006,108
Average length of haul per ton, miles	106.99
Average amount received for each ton freight	\$0.54778
Average amount received per ton per mile hauled . . . . .	.00512
Freight earnings (gross) per mile of road operated	5,151.11
Freight earnings (gross) per freight-train mile run	1.79327

Operating expenses:

Operating expenses per mile of road operated	8,298.69
Operating expenses per revenue-train mile run	1.63270

Train mileage:	
Miles run by passenger trains	368,199
Miles run by freight trains	478,496
Total mileage of trains earning revenue	846,695
Miles run by switching trains	300,889
Miles run by construction and other trains	18,028
Total train mileage	1,165,612
Fares and freights:	
Average rate of fare per mile on single local tickets	2.194 cents
Average rate of fare per mile on commutation tickets	1.530 "
Average rate of fare per mile on mileage tickets	2.000 "
Average rate of fare per mile on season tickets	0.946 "
Average rate of fare per mile on joint tickets	2.144 "
Average rate of freight per ton mile on local way-bill	1.628 "
Average rate of freight per ton mile on joint way-bill	0.330 "
Employees:	
Average number of persons employed	1,129
RAILROAD OWNED.	
Length of main line in New Hampshire	52.060 miles
Total length of main line	165.220 "
Length of side track, etc., in New Hampshire	18.110 "
Total length of side track, etc.	78.440 "
Total length of track owned in New Hampshire	70.170 "
Total length of track owned	243.660 "
RAILROAD OPERATED.	
Length of main line in New Hampshire	52.060 miles
Total length of main line	165.220 "
Length of branch line (Norway branch)	1.360 "
Total length of line operated in New Hampshire	52.060 "
Total length of line operated	166.580 "
Length of side track, etc., in New Hampshire	18.110 "
Total length of side track, etc.	78.440 "
Total length of track operated in New Hampshire	70.170 "
Total length of track operated	245.020 "

RAILROAD CROSSINGS IN NEW HAMPSHIRE.	
<i>Crossings with Highways.</i>	
Number of crossings of company's railroad with highways at grade	22
Number of highway grade crossings protected by flagmen	2
Number of highway grade crossings unprotected	20
Number of highway bridges less than 18 feet above track	1
Height of lowest highway bridge above track	17 ft. 3 in.
<i>Crossings with Other Railroads.</i>	
Crossings of company's railroad with other railroads at grade	3
1 at Beatties with Maine Central R. R., owned by Maine Central R. R.	
1 at Berlin with Berlin Street Railway, owned by Berlin Street Railway.	
1 at Cascade Falls with Berlin Street Railway, owned by Berlin Street Railway.	
RAILROAD BRIDGES IN NEW HAMPSHIRE.	
Total length of pile and trestle bridging, feet	192

LIST OF ACCIDENTS.

	From causes beyond their own control (in New Hampshire).		From their own misconduct or carelessness (in New Hampshire).		Total in New Hampshire.		Total on all lines operated.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.. . . .		1		1		2		4
Employees.. . . .		7		8		15	3	25
Others				1		1	2	3
Total.....		8		10		18	5	32

 STATEMENT OF EACH ACCIDENT IN NEW HAMPSHIRE.

April 4, 1904. B. McLaughlin, passenger. Stone thrown through car window; cut on hand and ear.

October 17, 1903. F. Champain, passenger. Found on track with skull fractured, supposed to have fallen off train; indications of intoxication.

July 3, 1903. W. Bowen, cook. Assaulted while in charge of boarding car; sight of left eye destroyed.

July 23, 1903. J. Baron, trackman. Loading cars with rails; three ribs fractured.

August 1, 1903. P. Shepard, laborer. Run over by train; foot injured.

August 3, 1903. T. Finnerty, switchman. Caught by overalls in breakhead; thigh wrenched.

September 2, 1903. P. Roberge, brakeman. Caught in door of coal car; hand jammed.

November 4, 1903. T. Tatre, brakeman. Struck by switch; hip injured.

October 29, 1904. A. Scodert, laborer. Handling stone; finger jammed.

November 10, 1903. W. R. Boulds, conductor, and G. Bowler, brakeman. Engine broke apart from train and brakes went into emergency. Boulds had hips hurt and Bowler had right leg hurt.

November 19, 1903. C. Boulanger, laborer. Stepping off car, slipped and fell; right arm sprained and cut over eye.

December 12, 1903. H. Waldron, fireman. Pin fell out of grate; fingers split.

February 2, 1904. J. E. Noyes, laborer. Loading freight, gangway slipped; thumb crushed.

April 16, 1904. F. J. Cristy, brakeman. Car struck bunting post; stunned and bruised.

May 13, 1904. A. Danforth, conductor. Overhead bridge; head and back injured.

June 28, 1904. F. D. Hardy, switchman. Attempting to board moving car; foot crushed and had to be amputated.

January 24, 1904. John Welch, trespasser. Struck by wing of snowplow; leg injured.

 PROPER ADDRESS OF THE COMPANY.

ATLANTIC & ST. LAWRENCE RAILROAD COMPANY.

PORTLAND, ME.

 NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Charles M. Hays, Montreal, Que.; vice-president, Frank W. Morse, Montreal, Que.; treasurer and clerk, Walter W. Duffett, Portland, Me.; solicitor, Clarence A. Hight, Portland, Me.; superintendent, M. S. Blaiklock, Montreal, Que.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Charles M. Hays, Frank W. Morse, John W. Loud, Montreal, P. Q.; Franklin M. Barrett, Walter W. Duffett, William W. Brown, Edward A. Noyes, Philip G. Brown, Portland, Me.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

EDWARD A. NOYES,
W. W. DUFFETT,
Directors.

W. W. DUFFETT,
Treasurer.

STATE OF MAINE.

CUMBERLAND, ss. Portland, September 17, 1904. Then personally appeared the above-named W. W. Duffett and Edward A. Noyes and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

ALFRED A. MONTGOMERY,
Justice of the Peace.

REPORT

OF THE

BOSTON & MAINE RAILROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.

Gross earnings from operation	\$34,894,608.19	
Operating expenses	25,271,907.63	
Net earnings from operation		\$9,622,700.56
Dividends received on stocks owned:		
Maine Central Railroad, 25,160 shares, 7 per cent	\$176,120.00	
Portland & Ogdensburg Railroad, 3,952 4-10 shares, 2 per cent	7,904.80	
St. Johns Bridge & Ry. Extn Co., (par \$50) 240 shares, 15 per cent	1,800.00	
York Harbor & Beach Railroad, (par \$50) 5,071 shares, 2 per cent	5,071.00	
Owned by C. & M. R. R.:		
Suncook Valley Railroad, 630 3-5 shares, 6 per cent	3,783.60	
Pemigewasset Valley Railroad, 381 shares, 6 per cent	2,286.00	
New Boston Railroad, 100 shares, 4 per cent	400.00	
Mt. Washington Railway, 1,099 shares, 4 per cent	4,396.00	
Owned by C. & P. R. R.:		
Mt. Washington Railway, 194 shares, 4 per cent	776.00	
Owned by Conn. River R. R.:		
Vermont Valley Railroad, 9,734 shares, 7 per cent	34,069.00	

Owned by B. & L. R. R.:		
Peterborough Railroad, 331 shares, 4 per cent	\$1,324.00	
Total		\$237,930.40
Interest received on bonds owned:		
Woodsville Aqueduct Company owned by B. & M. Railroad, \$5,450, one year at 4 per cent . .	\$218.00	
Owned by C. & M. R. R., \$10,000, one year at 4 per cent	400.00	
Total		618.00
Miscellaneous income, less expense of collecting:		
Rents of tenements, lands, etc., \$321,848.44; less expense, \$46,971.10	\$274,877.34	
Bridge tolls, \$10,308.99; less expense, \$1,449.80	8,859.19	
Interest received	36,019.53	
Sundry items	18,579.71	
Total		338,335.77
Gross income above operating expenses		\$10,199,584.73
Charges upon income accrued during year:		
Interest on funded debt		\$1,383,479.96
Interest and discount on unfunded debts and loans, real estate, mortgages, etc.		98,815.68
Taxes		1,633,269.90
Rentals of leased roads:		
Fitchburg	\$1,823,797.07	
Boston & Lowell	775,920.56	
Concord & Montreal	804,616.33	
Connecticut River	349,065.00	
Worcester, Nashua & Rochester	250,000.00	
Vermont & Massachusetts	221,600.00	
Connecticut & Passumpsic Rivers	213,000.00	
Northern	216,104.00	
Nashua & Lowell	73,000.00	
Lowell & Andover	52,500.00	
Manchester & Lawrence	112,960.00	
Stony Brook	21,500.00	
Wilton	20,400.00	
Peterborough	15,700.00	
Concord & Portsmouth	25,000.00	
Pemigewasset Valley	32,790.00	
Suncook Valley	14,700.00	
Massawippi Valley	40,000.00	

Kennebunk & Kennebunkport	\$2,925.00	
New Boston	2,800.00	
Troy & Bennington	15,400.00	
Newport & Richford, \$17,500; sub-let to Canadian Pacific Railway, for \$18,000; credit	500.00	
Total		\$5,083,277.96
Payments to sinking and other special funds:		
Sinking fund, Eastern Railroad	\$100,000.00	
Sinking fund, Boston & Maine Railroad	51,285.00	
Total payments		151,285.00
Total charges and deductions from income		\$8,350,128.50
Net divisible income		\$1,849,456.23
Dividends declared during the year payable on—		
October 1, 1903, 1¾ per cent on \$22,707,700, common	\$397,384.75	
January 1, 1904, 1¾ per cent on \$22,707,700, common	397,384.75	
April 1, 1904, 1¾ per cent on \$22,709,200, common	397,411.00	
July 1, 1904, 1¾ per cent on \$22,709,200, common	397,411.00	
September 1, 1903, 3 per cent on \$3,149,800, preferred	94,494.00	
March 1, 1904, 3 per cent on \$3,149,800, preferred	94,494.00	
Amount paid in lieu of dividends on common stock issued in ex- change for stock of roads pur- chased	420.00	
Total dividends declared		1,778,999.50
Surplus for the year ending June 30, 1904		\$70,456.73
Amount of surplus June 30, 1903		1,565,165.45
Total		\$1,538,074.95
Net amount charged to profit and loss		97,547.23
Total surplus June 30, 1904		\$1,538,074.95
EARNINGS FROM OPERATION.		
Gross receipts from passengers		\$12,466,301.09

Deductions:	
Tickets redeemed	\$23,525.83
Excess fares refunded	104,593.73
Total deductions	<u>\$128,119.56</u>
Net revenue from passengers: On steam roads, \$12,168,345.83; on electric roads, \$169,835.90	\$12,338,181.53
From mails	457,551.45
From express	1,027,086.51
From extra baggage and storage	148,453.73
Total earnings, passenger service	<u>\$13,971,273.22</u>
Gross receipts from freight	<u>\$20,516,898.36</u>
Deductions:	
Overcharge to shippers	153,292.98
Net revenue from freight	\$20,363,605.38
From stock yards	2,127.57
From elevators	52,694.55
Storage and miscellaneous	239,841.36
Total earnings, freight service	<u>\$20,658,268.86</u>
Total passenger and freight earnings	<u>\$34,629,542.08</u>
Other earnings from operation:	
Switching charges—balance	130,510.44
Telegraph companies	18,892.45
Rentals from tracks, yards, and terminals	60,047.62
Hire of equipment—balance	32,946.26
Steamer Mt. Washington	19,272.87
Steamer Lady of the Lake	3,396.47
Gross earnings from operation	<u>\$34,894,608.19</u>
EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers	\$117,214.95
Salaries of clerks and attendants	228,739.60
General office expenses and supplies	29,126.34
Insurance	216,666.33
Law expenses	185,935.11
Stationery and printing (general offices)	16,853.12
Miscellaneous expenses	26,283.69
Total	<u>\$820,819.14</u>

Maintenance of way and structures:

Repairs of roadway	\$2,300,368.06
Renewals of rails	104,769.96
Renewals of ties	517,934.39
Repairs and renewals of bridges and culverts	268,292.21
Repairs and renewals of fences, road crossings, signs, and cattle-guards	130,810.24
Repairs and renewals of buildings and fixtures	448,261.53
Repairs and renewals of docks and wharves	25,231.33
Repairs and renewals of telegraph	12,287.44
Stationery and printing	4,089.80
Repairs of electric line	4,552.00
Tools and machinery	9,659.70
Miscellaneous expense	2,445.83

Total	\$3,828,702.49
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Maintenance of equipment:

Superintendence	\$123,260.60
Repairs and renewals of locomotives, including \$158,350, new locomotives	1,379,593.11
Repairs and renewals of passenger cars, including \$87,420.44, new passenger cars	789,659.39
Repairs and renewals of freight cars, including \$101,732.27, new freight cars	1,080,844.04
Repairs and renewals of work cars, including \$3,485.47, new work cars	27,977.03
Repairs and renewals of marine equipment	4,745.06
Repairs and renewals of shop machinery and tools	53,857.03
Stationery and printing	7,835.60
Miscellaneous expenses, watching, etc.	179,048.65

Total	\$3,646,820.51
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Conducting transportation:

Superintendence	\$322,152.86
Engine and roundhouse men	2,432,949.77
Fuel for locomotives	4,443,986.19
Water supply for locomotives	167,612.62
Oil, tallow, and waste for locomotives	89,248.22
Other supplies for locomotives	23,683.13
Train service	2,028,960.02
Train supplies and expenses	430,763.02
Switchmen, flagmen, and watchmen	1,976,214.84
Telegraph expenses	338,897.77
Station service	2,546,136.58
Station supplies	355,095.13
Car service—balance	704,149.13
Loss and damage	207,217.24
Injuries to persons	318,154.40

Clearing wrecks	\$41,907.43
Operating marine equipment	16,876.03
Advertising	84,903.60
Outside agencies	89,233.67
Stock yards and elevators	36,240.40
Rentals for tracks, yards, and terminals	27,622.29
Rentals of buildings and other property	42,286.17
Stationery and printing	172,708.66
Electric motive power	56,730.72
Miscellaneous expenses	21,835.60
Total	<u>\$16,975,565.49</u>
Recapitulation:	
General expenses	\$820,819.14
Maintenance of way and structures	3,828,702.49
Maintenance of equipment	3,646,820.51
Conducting transportation	16,975,565.49
Total operating expenses: Steam roads, \$25,- 092,545.27; electric street railroads, \$179,- 362.36	<u>\$25,271,907.63</u>
Percentage of operating expenses to gross earnings	72.42

GENERAL BALANCE SHEET.

Cost of road	\$42,979,441.32
Cost of equipment	7,223,320.26
Real estate, Nashua	\$215,197.55
Real estate, Fabyans	1,631.98
Land at:	
Somerville, Mass.	440,368.47
Medford, Mass.	38,192.64
Malden, Mass.	28,383.40
Melrose and Melrose Highlands, Mass.	21,958.51
Wakefield, Mass.	3,300.00
Boxford, Mass.	519.10
Georgetown, Mass.	825.00
Dover	20,234.69
Rollinsford	1,051.00
Saco and Biddeford, Me.	23,701.65
Kennebunk, Me.	501.75
Old Orchard, Me.	7,648.52
Portland, Me.	27,349.29
Bar Harbor, Me.	45,104.37
Boston, Mass.	190,894.99

Everett, Mass.	\$30,239.40	
Chelsea, Mass.	21,836.30	
Revere, Mass.	19,517.92	
Cliffondale, Mass.	4,565.00	
Saugus, Mass.	525.00	
Lynn, Mass.	72,574.81	
Salem, Mass.	1,000.00	
Peabody, Mass.	435.10	
Danvers, Mass.	1,000.00	
Beverly, Mass.	9,274.25	
Hamilton, Mass.	5,000.00	
Manchester, Mass.	1,000.00	
Rockport, Mass.	1,911.46	
Newbury, Mass.	300.00	
Newburyport, Mass.	4,400.00	
Hampton	150.70	
Portsmouth	4,690.70	
Wells, Me.	64.12	
Rochester	2,200.00	
East Cambridge, Mass.	44,509.52	
Clematis Brook, Mass.	501.67	
Arlington, Mass.	2,500.00	
Wilmington, Mass.	561.50	
Chelmsford, Mass.	1,500.00	
Lowell, Mass.	4,613.80	
Harrisville	150.00	
Marlborough	65.00	
Tremont	400.00	
Windham	81.70	
On line of N. A. & B. Branch	334.00	
Kingston	142.10	
Andover, Mass.	206.57	
Ayer, Mass.	30.87	
Peabody, Mass.	560.06	
Haverhill, Mass.	151.15	
Manchester	480.66	
Northfield	326.27	
North Hampton	1,013.70	
Total		\$1,305,676.24
Stock of:		
Fitchburg Railroad, common.		
54,547 shares	\$5,454,549.75	
Maine Central Railroad, 25,160 shares	2,516,000.00	
Boston & Maine Railroad, common, 11,282 shares	1,293,559.95	
York Harbor & Beach Railroad (par \$50) 5,071 shares	250,050.00	
Portland & Ogdensburg Railroad, 3,952 4-10 shares	146,238.80	

Portland Union Railway Station Company, 250 shares	\$25,000.00	
Portland, Mt. Desert & Machias Steamboat Company (par \$50) 300 shares	15,000.00	
St. Johnsbury & Lake Champlain Railroad (par \$50), 809 shares	4,303.56	
Newburyport Railroad, 1,481 shares	4,443.00	
Danvers Railroad, 493 shares	2,411.00	
Portsmouth Bridge, 400 shares	4,000.00	
St. John Bridge & Railway Extension Company (par \$50), 240 shares	684.00	
Montreal & Atlantic Railway Company, 373 shares	3,000.00	
Concord & Claremont Railroad, 32 shares	640.00	
Proprietors Wells River Bridge, 11 shares	1,090.00	
Total		\$9,720,970.06
Bonds of:		
Newburyport Railroad, \$300,000	\$298,464.95	
Danvers Railroad, \$125,000	125,000.00	
Fitchburg Railroad, \$63,000	63,000.00	
St. Johnsbury & Lake Champlain Railroad, \$432,000	432,000.00	
Woodsville Aqueduct Company, \$5,450	5,618.50	
Total		\$924,083.45
Other permanent property:		
Steamer Mt. Washington and wharves	\$69,260.24	
Richford, Vt., elevator	52,261.43	
Total		121,521.67
Total permanent investments		\$62,275,013.00
Cash	\$2,483,452.52	
Bills receivable	962,729.51	
Due from agents	1,706,537.88	
Traffic balances due from other companies	372,083.87	
Due from solvent companies and individuals	2,755,085.00	
Sinking and other special funds	1,339,337.14	
Total cash and current assets		9,619,225.92

Materials and supplies	\$3,393,964.60	
Other assets and property:		
Prepaid insurance premiums, etc.	170,423.76	
Elimination of grade crossings in process	150,135.85	
Total miscellaneous assets		\$3,713,624.21
Total		\$75,607,863.13
Capital stock, common:		
Boston & Maine, common	\$23,837,500.00	
Boston & Maine, scrip	570.70	
		\$23,838,070.70
Capital stock, preferred		3,149,800.00
Total capital stock		\$26,987,870.70
Premium on Boston & Maine common stock sold		2,272,218.90
Funded debt		31,405,008.41
Real estate mortgages		594,800.00
Current liabilities:		
Loans and notes payable	\$1,700,000.00	
Audited vouchers and accounts	1,536,383.50	
Salaries and wages	709,931.68	
Traffic balances due to other companies	1,129,949.05	
Dividends not called for	4,880.25	
Matured interest coupons unpaid (including coupons due July 1)	235,825.79	
Rentals due and unpaid (including rentals due July 1)	1,182,286.36	
Dividend on common stock, due July 1, 1904	397,411.00	
Total current liabilities		\$6,946,667.63
Accrued liabilities:		
Interest accrued and not yet due	\$292,738.50	
Taxes accrued and not yet due	577,979.74	
Rentals accrued and not yet due	427,262.65	
Total accrued liabilities		1,297,980.89
Amount due leased roads at termination of leases		1,823,079.10
Sinking and other special funds:		
Sinking funds for redemption of Boston & Maine Railroad bonds	\$1,337,865.60	
Sinking funds for redemption of Eastern railroad bonds	360,321.52	

Injury fund	\$150,000.00	
Contingent fund	65,010.22	
Suspense account	828,965.21	
Total sinking and other special funds		\$2,742,162.55
Profit and loss balance—surplus		1,538,074.95
Total		\$75,607,863.13

PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS
DURING THE YEAR.

Additions to construction account:		
Grading and masonry	\$2,291.52	
Bridging	4,258.78	
Superstructure, including rails	75,601.17	
Lands, land damages, and fences	535.06	
Passenger and freight stations, woodsheds, and water stations	10,703.64	
Engineering and other expenses incident to construction	459.75	
Elimination of grade crossings	269,577.33	
Portsmouth Electric Railway construction	3,352.77	
Central Massachusetts Railroad purchase	2,528.00	
Total additions to construction account		\$358,800.84
Additions to equipment account:		
Locomotives (23 in number)	\$307,950.00	
Cars for freight service (206 in number)	137,748.42	
Total additions to equipment account		445,698.42
Other expenditures charged to property accounts		
111 shares stock of Newburyport Railroad	\$333.00	
22 shares stock of Danvers Railroad	66.00	
Land at:		
Somerville, Mass.	12,613.03	
Medford, Mass.	6,502.51	
Malden, Mass.	886.77	
Boxford, Mass.	559.10	
Saco and Biddeford, Me.	351.65	
Kennebunk, Me.	501.75	
Portland, Me.	261.25	
Revere, Mass.	517.92	
Peabody, Mass.	132.50	
Andover, Mass.	101.67	

Northfield	\$326.27	
Haverhill, Mass.	151.15	
Manchester	480.66	
Kingston	142.10	
Total		\$23,927.33
Total additions to property accounts		\$828,426.59
Deductions from property accounts:		
Fitchburg Railroad Company.		
bonds sold	\$114,000.00	
Land at:		
Boxford, Mass., sold	141.25	
Peabody, Mass., sold	1,566.19	
Valley Falls, N. Y., transferred to improvement account Fitch- burg Railroad	1,402.50	
Exeter, transferred to construc- tion account	300.00	
Total deductions from property accounts		117,409.94
Net addition to property accounts for the year		\$711,016.65
CAPITAL STOCK.		
Capital stock authorized by law, common	\$24,996,725.30	
Capital stock authorized by law, preferred	3,149,800.00	
Total capital stock authorized by law		\$28,146,525.30
Capital stock authorized by votes of company, common	\$24,653,125.30	
Capital stock authorized by votes of company, preferred	3,149,800.00	
Total capital stock authorized by vote		\$27,802,925.30
Capital stock issued and outstanding, common	\$23,837,500.00	
Capital stock issued and outstanding, preferred	3,149,800.00	
Total capital stock outstanding	\$26,987,300.00	
Scrip convertible into stock	570.70	
Total capital stock liability		\$26,987,870.70

Number of shares issued and outstanding, common	238,375
Number of shares issued and outstanding, preferred	31,498
Total number of shares outstanding	269,873
Number of stockholders, common	6,818
Number of stockholders, preferred	725
Total number of stockholders	7,543
Number of stockholders in New Hampshire, common	1,433
Number of stockholders in New Hampshire, preferred	72
Total stockholders in New Hampshire	1,505
Amount of stock held in New Hampshire, common	\$2,352,100.00
Amount of stock held in New Hampshire, preferred	369,600.00
Total stock held in New Hampshire	\$2,721,700.00

REAL ESTATE MORTGAGES.

DESCRIPTION OF MORTGAGED PROPERTY.	Rate of Mortgage interest. when due.	Amount.	Interest paid during year.
Land in Charlestown, Mass.	4% Sept. 1, 1906	\$594,800.00	\$23,792.00
Total.		\$594,800.00	\$23,792.00

FUNDED DEBT.

DESCRIPTION OF BONDS, ETC.	Rate of interest.	Date of maturity.	Amount outstanding.	Interest paid during year.
Boston & Maine Railroad bonds	4½%	Jan. 1, 1944	\$6,000,000.00	\$269,842.50
“ “ “ “	4%	Aug. 1, 1942	2,500,000.00	100,040.00
“ “ “ “	3%	July 1, 1950	5,454,000.00	163,770.00
“ “ “ “	3½%	Nov. 1, 1921	1,000,000.00	34,527.50
“ “ “ “	3½%	Jan. 1, 1923	2,000,000.00	34,842.50
Boston & Maine Railroad Impt. bonds	4%	Feb. 2, 1905	1,000,000.00	40,000.00
Boston & Maine Railroad Impt. bonds	4%	Feb. 1, 1907	500,000.00	20,000.00
Boston & Maine Railroad Impt. bonds	4%	Feb. 1, 1937	1,919,000.00	76,760.00
Eastern Railroad certificates of indebtedness, U. S. gold	6%	Sept. 1, 1906	6,406,000.21	387,015.00
Eastern Railroad certificates of indebtedness, £ sterling	6%	“	1,512,508.20	90,808.90
Portsmouth, Great Falls & Conway Railroad bonds	4½%	June 1, 1937	998,000.00	45,697.50
Portsmouth, Great Falls & Conway Railroad bonds, 7½%	4½%	Dec. 1, 1892*	2,000.00	.....
Portland & Rochester Railroad terminal bonds	4%	Oct. 1, 1907	113,500.00	4,490.00
Central Massachusetts Railr'd bonds	5%	Oct. 1, 1906	2,000,000.00	100,000.00
Total.....			31,405,008.41	\$1,367,793.90

SINKING FUNDS.

Amount June 30, 1903, for redemption of B. & M. R. R. improvement bonds, sinking fund	\$1,238,338.67
Amount June 30, 1903, of Eastern R. R. bonds, sinking fund	265,693.05
Total sinking funds June 30, 1903	\$1,504,031.72

* The \$2,000 of old bonds of Portsmouth, Great Falls & Conway Railroad have not yet been presented for exchange for the new bonds due June 11, 1937.

Additions during the year to B. & M. R. R. improvement bonds, sinking fund		\$99,526.93	
Additions during the year to Eastern R. R. bonds, sinking fund		100,042.01	
			199,568.94
Total, including additions			\$1,703,600.66
Deductions during the year from Eastern Railroad bonds, sinking fund			3,413.54
Total sinking funds June 30, 1904			\$1,698,187.12
INJURY FUND.			
Amount of injury fund June 30, 1903			\$150,000.00
Additions during the year			318,154.40
Total, including additions			\$468,154.40
Deductions during the year			318,154.40
Total injury fund June 30, 1904			\$150,000.00
CONTINGENT FUND.			
Amount of contingent fund June 30, 1903			\$94,553.49
Additions during the year			70,456.73
Total, including additions			\$165,010.22
Deductions during the year:			
Cost of 4 locomotives		\$5,175.00	
Cost of 4 baggage and 3 combination cars		34,545.19	
Cost of 173 freight cars and 4 snowplows		60,279.81	
			100,000.00
Total improvement fund June 30, 1904			\$65,010.22
VOLUME OF TRAFFIC, ETC.			
Passenger traffic:			
Number of passengers carried paying revenue, on steam roads			37,689,433
Number of passengers carried paying revenue, on electric street roads			2,567,868
Number of passengers carried one mile, not including electric street roads			681,938,257

Number of passengers carried one mile per mile of road operated, not including electric street roads	303,883
Average miles of steam roads operated	2,244.08
Average miles of electric street roads operated	41.38
Average length of journey per passenger, not including electric street roads, miles	18.09
Average amount received from each passenger, including electric street roads	\$0.30648
Average amount received per passenger per mile carried, not including electric street roads . . . . .	.01784
Passenger earnings (gross) per average mile of road operated, including electric roads	6,113.11
Passenger earnings (gross) per passenger-train mile run, not including electric street roads	1.21409
Freight traffic:	
Number tons of freight hauled earning revenue	19,395,452
Number of tons of freight hauled one mile	1,728,422,684
Number of tons of freight hauled one mile per mile of road operated, not including electric street roads	770.214
Average length of haul per ton, miles	89.11
Average amount received for each ton freight	\$1.04992
Average amount received per ton per mile hauled	1.178
Freight earnings (gross) per mile of road operated, not including electric street roads	9,205.67
Freight earnings (gross) per freight-train mile run	2.42565
Operating expenses:	
Operating expenses per mile of road operated, not including electric street roads	11.181.66
Operating expenses per revenue-train mile run, not including electric street roads	1.27342
Train mileage:	
Miles run by passenger trains	11,188,201
Miles run by freight trains	8,337,524
Miles run by mixed trains	179,142
Total mileage of trains earning revenue	19,704,867
Miles run by switching trains	7,444,385
Miles run by construction and other trains	1,627,485
Total train mileage	28,776,737
Fares and freights:	
Average rate of fare per mile on single local tickets, not including electric street roads	1.765 cents

Average rate of fare per mile on commutation tickets, within suburban circuit	1 to 2 cents
Average rate of fare per mile on commutation tickets, outside suburban circuit	2 to 2 1/4 "
Average rate of fare per mile on mileage tickets (500 miles)	2 1/4 "
Average rate of fare per mile on mileage tickets (1,000 miles)	2 "
Average rate of fare per mile on season tickets	0.714 "
Average rate of fare per mile on joint tickets	1.905 "
Average rate of freight per ton mile on local way-bill	2.124 "
Average rate of freight per ton mile on joint way-bill	0.771 "
Passengers to and from Boston:	
Number of passengers (including season ticket) to Boston	9,922,117
Number of passengers (including season ticket) from Boston	10,245,650
Season-ticket passengers to and from Boston	2,091,546
Average number of persons employed	22,999

RAILROAD OWNED.

Length of main line in New Hampshire	124.28 miles
Total length of main line	446.52 "
Length of branch line in New Hampshire	75.32 "
Total length of branch line	169.48 "
Total length of line owned in New Hampshire	199.60 "
Total length of line owned	616.00 "
Length of second track in New Hampshire	40.76 "
Total length of second track	167.80 "
Total length of third track	2.26 "
Length of side track, etc., in New Hampshire	60.26 "
Total length of side track, etc.	338.82 "
Total length of track owned in New Hampshire	300.62 "
Total length of track owned	1,124.88 "

RAILROAD OPERATED.

Length of main line in New Hampshire	501.18 miles
Total length of main line	1,353.90 "
Length of branch line in New Hampshire	558.00 "
Total length of branch line	936.40 "
Total length of line operated in New Hampshire	1,059.18 "
Total length of line operated	2,290.30 "
Average length of line operated during the year	2,285.46 "
Length of second track in New Hampshire	81.28 "
Total length of second track	512.96 "

Length of third track in New Hampshire	1.35 miles
Total length of third track	8.31 "
Total length of fourth track	2.02 "
Length of side track, etc., in New Hampshire	378.42 "
Total length of side track, etc.	1,216.80 "
Total length of track operated in New Hampshire	1,520.23 "
Total length of side track operated	4,030.39 "

EQUIPPED FOR ELECTRIC POWER.

Length of main line	46.22 miles
Length of side track, etc.	3.40 "
Total length of electric track	49.62 miles

RAILROAD CROSSINGS IN NEW HAMPSHIRE.

Crossings with Highways.

Number of crossings of Company's railroad with highways at grade	908
Number of highway grade crossings protected by gates	48
Number of highway grade crossings protected by flagmen	75
Number of highway grade crossings protected by electric signals only	5
Number of highway grade crossings unprotected	780
Number of highway bridges 18 feet (or more) above track	43
Number of highway bridges less than 18 feet above track	67
Height of lowest highway bridge above track	14 ft. 11 in.

Crossings with Other Railroads.

Crossings of company's railroads with other railroads at grade	5
Scotts. White Mountain Division with Maine Central Railroad.	
Coös Junction. White Mountain Division with Maine Central Railroad.	
Fabyans. Mount Washington Branch with Maine Central Railroad.	
Whitefield. Whitefield & Jefferson Branch with Maine Central Railroad.	
Jefferson Junction. Whitefield & Jefferson Branch with Maine Central Railroad.	

Description of Railroads and Branches Owned by

NAME OF RAILROAD OR BRANCH.	Main or Branch Line.	Termini of Main or Branch Line.
Worcester, Nashua & Rochester....	Main.	Worcester, Mass., to Rochester.....
Boston & Lowell	"	Boston to Lowell, Mass.....
Mystic	Branch.	Somerville to Mystic Wharves, Mass.....
Lexington	"	Somerville to Lexington, Mass.....
Midland Central	"	Lexington to Concord, Mass.....
Bedford & Billerica	"	Bedford to Billerica, Mass.....
Woburn	"	Winchester to North Woburn Junc., Mass.....
Stoneham	"	Montvale Junc. to Stoneham, Mass.....
Lawrence	"	Wilmington to Wilmington Junc., Mass.....
Salem & Lowell	"	Peabody to Tewksbury Junc., Mass.....
Lowell & Lawrence	"	Lowell to Lawrence, Mass.....
Nashua & Lowell	Main.	Lowell, Mass., to Nashua
Concord & Montreal.....	"	Nashua to Groveton
Hooksett	Branch.	Hooksett to Bow Junction
Mt. Washington	"	Wing Road to Base Mt. Washington.....
Nashua, Acton & Boston	"	North Acton, Mass., to Nashua
Manchester & North Weare.....	"	Manchester to Henniker
Lake Shore.....	"	Lakeport to Alton Bay
Tilton & Belmont.....	"	Belmont Junction to Belmont.....
Whitefield & Jefferson.....	"	{ Whitefield Junction to Berlin { Jefferson Meadows to Jefferson. {
Profile & Franconia Notch.....	"	Bethlehem Junc. to Bethlehem & Profile
Manchester & Milford	"	Grasmere Junc. to East Milford [House
Franklin & Tilton	"	Franklin to Tilton
New Boston	"	Parkers to New Boston
Concord & Portsmouth.....	"	Portsmouth to Manchester.....
Suncook Valley	"	Suncook to Pittsfield.....
Suncook Valley Extension.....	"	Pittsfield to Center Barnstead
Pemigewasset Valley.....	"	{ Plymouth to Lincoln.....
		{ Campton to Campton Village {
Concord & Manchester Elec. Br..	"	{ Concord to Manchester and Penacook }
Northern	Main.	Concord to White River Junction, Vt.....
Peterborough & Hillsborough.....	Branch.	Peterborough to Hillsborough Bridge.....
Bristol	"	Franklin to Bristol
Concord & Claremont	"	{ Concord to Claremont Junction
Connecticut and Passumpsic Riv's.	Main.	{ Contocook to Hillsborough Bridge }
Massawippi Valley.....	"	White River Junc., Vt., to Canada Line..
Stanstead.....	Branch.	Canada Line to Lenoxville, P. Q.....
Connecticut River.....	Main.	Stanstead Junc. to Stanstead, P. Q.....
Chicopee Falls	Branch.	Springfield, Mass., to Keene
East Hampton	"	Chicopee Junc. to Chicopee Falls, Mass.....
Danvers	"	Mt. Tom Junc. to Easthampton, Mass.....
Newburyport	"	{ Wakefield Junction to Danvers, Mass.....
		{ Bradford to Newburyport, Mass }
Lowell & Andover	"	{ Georgetown to Danvers, Mass. }
Manchester & Lawrence	"	Lowell Junction to Lowell, Mass.....
Kennebunk & Kennebunkport.....	"	N. H. State Line to Manchester
Stony Brook	"	Kennebunk to Kennebunkport, Me.....
Wilton	"	No. Chelmsford to Ayer Junction, Mass.....
Peterborough (W. N. & P. Div.)....	"	Nashua to Wilton
Manchester & Keene	"	Wilton to Greenfield.....
Fitchburg	Main.	Greenfield to Keene
Fitchburg	"	Boston to Fitchburg, Mass.....
Fitchburg	"	Greenfield, Mass., to Rotterdam Jc., N.Y.
Fitchburg	"	Vermont State Line to Troy, N.Y.....
Boston	Branch.	Ashburnham Jc., Mass., to Bellows Falls,
Watertown	"	Ice track in Boston, Mass..... [Vt.
Marlborough	"	W. Cambridge to Waltham, Mass.....
Greenville	"	So. Acton to Marlborough, Mass.....
		Ayer, Mass., to Greenville

Carried forward

Other Companies but Operated by this Company.

Length of line in miles.		Second track.		Third track.		Fourth track.		Side track, etc.		Length com- puted as single track.	
Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.
94.48	55.02	18.13						50.13	18.54	162.74	73.56
26.75		26.75						64.64	5.36	118.14	5.36
2.25		.85						32.51		35.61	
8.11		8.11						3.68		19.90	
11.08								3.68		14.76	
7.63								.80		8.43	
6.20		6.20						3.30		15.70	
2.50								1.56		4.06	
3.21								1.58		4.79	
16.80								7.43		24.23	
12.42								6.73		19.15	
14.50	5.25	14.50	5.25					13.04	4.90	42.04	15.40
181.07	181.07	35.27	35.27	1.35	1.35			115.32	115.32	333.01	333.01
7.69	7.59							3.72	3.72	11.31	11.31
20.17	20.17							5.07	5.07	25.24	25.24
20.12	4.98							5.30	2.39	25.42	7.37
24.50	24.50							8.72	8.72	33.22	33.22
17.28	17.28							1.93	1.93	19.21	19.21
4.17	4.17							.65	.65	4.82	4.82
33.69	33.69							13.27	13.27	46.96	46.96
12.84	12.84							1.75	1.75	14.59	14.59
18.54	18.54							1.10	1.10	19.64	19.64
4.95	4.95							3.75	3.75	8.70	8.70
5.19	5.19							.82	.82	6.01	6.01
39.87	39.87							15.66	15.66	55.53	55.53
17.41	17.41							4.01	4.01	21.42	21.42
4.46	4.46							1.21	2.21	5.67	5.67
22.93	22.93							13.41	13.41	36.34	36.34
27.88	27.88							2.45	2.45	30.33	30.33
69.50	69.26							25.96	25.31	95.46	94.57
18.51	18.51							2.45	2.45	20.96	20.96
18.41	13.41							1.06	1.06	14.47	14.47
70.90	70.90							12.74	12.74	83.64	83.64
110.30								41.62		151.92	
31.95								6.48		38.43	
3.51								.96		4.47	
74.00	23.21	36.00		.80				61.53	5.20	172.33	28.41
2.35								1.85		4.20	
3.50								1.36		4.86	
9.26								2.28		11.54	
26.98								4.92		31.90	
8.85		7.28						6.23		22.36	
22.39	22.39							10.79	10.79	33.18	33.18
4.50								.93		5.43	
13.16								6.06		19.22	
15.50	15.50							5.01	5.01	20.51	20.51
10.50	10.50							1.58	1.58	12.08	12.08
29.59	29.59							2.62	2.62	32.21	32.21
49.65		49.65		3:90		2.02		86.70		191.92	
105.25		70.60						93.59		266.44	
40.30								10.45		50.75	
53.85	43.09							25.23	21.22	79.08	64.31
.66		.49								1.15	
6.63		6.48						4.78		17.89	
12.35								3.92		16.27	
23.64	9.58							4.34	1.97	27.98	11.55
1499.58	824.15	280.31	40.52	6.05	1.35	2.02		809.66	314.98	2597.62	1189.58

Description of Railroads and Branches Owned by

NAME OF RAILROAD OR BRANCH.	Main or Branch Line.	Termini of Main or Branch Line.
<i>Brought forward</i>		<i>Brought forward</i>
Milford	Branch.	Squamacook Junc., Mass. to Milford.
Ashburnham	"	So. Ashburnham to Ashburnham, Mass.
Worcester	"	Worcester to Winchendon, Mass.
Peterborough (F. Div.)	"	Winchendon, Mass. to Peterborough.
Saratoga & Schuylerville	"	(Saratoga Junc. to Saratoga, N. Y.)
Vermont & Massachusetts	Main.	(Schuylerville Jc. to Schuylerville, N. Y.)
Turner Falls	Branch.	Fitchburg to Greenfield, Mass.
Troy & Bennington	"	Turner's Falls Jc. to Turner's Falls, Mass.
Trackage rights		Hoosick Junc., N. Y., to State Line, Vt.
" "		No. Acton to Concord Junction, Mass.
" "		Lenoxville to Sherbrooke, P. Q.
" "		In city of Troy, N. Y.
" "		Mechanicsville to Crescent, N. Y.
Total		

Other Companies but Operated by this Company.

Length of line in miles.		Second track.		Third track.		Fourth track.		Side track, etc.		Length com- puted as single track.	
Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.
1,499.58	824.15	280.31	40.52	6.05	1.35	2.02	.....	809.66	314.98	2,597.62	1,189.58
21.73	12.17	.....	.....	.....	.....	.....	.....	4.23	2.08	25.96	14.25
2.59	.....	.....	.....	.....	.....	.....	.....	.52	.....	3.11	.....
35.74	.....	.....	.....	.....	.....	.....	.....	14.17	.....	49.91	.....
15.93	13.68	.....	.....	.....	.....	.....	.....	2.10	2.10	18.03	15.78
25.82	.....	.....	.....	.....	.....	.....	.....	4.31	.....	30.13	.....
55.78	.....	55.78	.....	.....	.....	.....	.....	41.28	.....	152.84	.....
2.80	.....	.....	.....	.....	.....	.....	.....	.64	.....	3.44	.....
5.04	.....	.....	.....	.....	.....	.....	.....	1.07	.....	6.11	.....
4.21	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.21	.....
2.95	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.95	.....
2.13	.....	2.13	.....	.....	.....	.....	.....	.....	.....	4.26	.....
.....	.....	6.94	.....	.....	.....	.....	.....	.....	.....	6.94	.....
1,674.30	859.58	345.16	40.52	6.05	1.35	2.02	.....	877.98	318.16	2,905.51	1,219.61

Description of Railroads and Branches

NAME OF RAILROAD OR BRANCH.	Main or Branch Line.	Termini of Main or Branch Line.
Boston & Maine, Western Division	Main.	Boston, Mass., to Portland, Me
Eastern Division	"	"
Northern Division	"	Conway Junc., Me., to Intervale Junc
W. N. & P. Division	"	Rochester to Portland, Me.
Southern Division	Branch.	N. Cambridge Junc. to Northampton, Mass.
Medford	"	Medford Junc. to Medford, Mass.
South Reading	"	Peabody to Wakefield Junc., Mass.
Methuen	"	Lawrence, Mass., to N. H. State Line
West Amesbury	"	Merrimack, Mass., to Newion
Orchard Beach	"	Old Orchard Beach to Saco River, Me.
Charlestown	"	Freight tracks in Charlestown, Mass.
East Boston	"	East Boston to Revere, Mass.
Saugus	"	Everett to West Lynn, Mass.
Chelsea Beach	"	Revere Junc. to Saugus River Junc., Mass.
Swamscott	"	Swamscott to Marblehead, Mass.
Marblehead	"	Salem to Marblehead, Mass.
Lawrence	"	Salem to North Andover, Mass.
Gloucester	"	Beverly to Rockport, Mass.
Essex	"	Wenham to Essex, Mass. [Mass.]
Newburyport City	"	Eastern tracks to Newburyport Wharves,
Salisbury	"	Salisbury to Amesbury, Mass.
Portsmouth & Dover	"	Portsmouth to Dover
Dover & Winnepesaukee	"	Dover to Alton Bay
Somersworth	"	Rollinsford to Somersworth
Wolfeborough	"	Sanbornville to Wolfeborough
Union	"	Green Street to M. C. R., Portland, Me.
Lowell and Lawrence and Lowell & Andover connection	"	Lowell, Mass.
Electric street railway	"	Portsmouth, Rye, and Northampton
Total		

Owned by this Company.

Length of line in miles.		Second track		Third track.		Side track, etc.		Length com- puted as single track.	
Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.
115.31	34.75	81.21	24.83	1.53		116.96	16.29	315.01	75.87
108.29	16.08	57.38	15.93	.73		84.96	9.72	251.36	41.73
73.37	70.45					25.01	18.87	98.38	89.32
53.86	3.00					20.84	2.42	74.70	5.42
95.69						24.99		120.68	
2.00		2.00				1.96		5.96	
8.12						2.20		10.32	
3.75		1.00				14.38		19.13	
4.45	2.32					.62	.20	5.67	2.52
3.27						.36		3.63	
1.09		1.09						2.18	
3.47		1.56				10.97		16.00	
9.55		9.55				5.94		25.04	
3.34		2.49				.22		6.05	
3.96		.52				1.30		5.78	
3.52						.88		4.40	
19.89		1.64				7.79		29.32	
16.94		8.99				4.92		30.53	
6.00						1.97		7.97	
1.97						1.27		3.24	
3.79						2.43		6.23	
10.88	10.88					2.28	3.00	13.16	13.88
29.00	29.00					7.10	7.10	36.10	36.10
2.75	2.75					.46	1.81	4.21	4.56
12.03	12.03					1.07	1.83	13.10	13.86
1.12								1.12	
.25		.37						.62	
18.34	18.34					.95	.95	19.29	19.29
616.00	199.60	167.80	40.76	2.26		338.82	62.19	1,124.88	302.55

DESCRIPTION OF EQUIPMENT.

ROLLING STOCK.	Number owned.	Number owned by leased roads.	Total owned and leased.	Number equipped with power driving-wheels.	Maximum weight, pounds.	Average weight, pounds.	Number equipped with power train brakes.	Number equipped with automatic couplers.	Name of coupler used.
Passenger locomotives	182	242	394	393	156,000	99,100	.....	.....	.....
Freight "	182	210	392	392	175,000	123,450	.....	.....	.....
Switching, etc. "	96	129	225	224	114,000	81,580	.....	.....	.....
Total	460	551	1,011	1,009	.....	.....	.....	.....	.....
Passenger cars	552	436	988	.....	.....	.....	965	925	{ 439 Gould, 4 Miller, 472 National, 10 Tower.
Combination cars	102	138	240	.....	.....	.....	240	240	{ 52 Gould, 188 National.
Parlor cars	1	8	9	.....	.....	.....	9	9	{ 6 Gould, 3 National.
Baggage, express and mail cars	143	159	302	.....	.....	.....	302	302	{ 68 Gould, 198 National, 32 Trojan, 4 Tower.
Other cars in passenger service	40	26	66	.....	.....	.....	66	66	{ 16 Gould, 49 National, 1 Trojan.
Total	838	767	1,605	.....	.....	.....	1,582	1,542	.....
Box cars	2,864	5,607	8,471	.....	.....	.....	7,680	8,471	{ 1 Burns, 8,062 Gould, 2 Janney, 406 Trojan.
Flat cars	1,000	2,073	3,073	.....	.....	.....	2,445	3,073	{ 3 Burns, 2,881 Gould, 3 Janney, 1 National, 1 Standard, 234 Trojan.
Stock cars	108	52	160	.....	.....	.....	150	160	{ 2 Trojan, 158 Gould.

NEW BRIDGES.

NUMBER AND LOCATION.	Description of bridge replaced.	Description of new bridge.	Length of span and number of tracks.	By whom built.
Eastern Division:				
70, Portsmouth.....	Wood pony and pile trestle.....	Wood, pony and pile trestle.....	333 ft., 1 track.	Boston & Maine Railroad.
290, Conway.....	Howe truss through.	Lattice and arch.....	138 ft., 10 in., " "	" "
295, North Conway.....	Combination thro..	Lattice through.....	225 ft., 10 in., " "	" "
Western Division:				
308, Fernald.....	Pile trestle.....	Pile trestle.....	62 ft., 6 in., " "	" "
309, Fernald.....	Pile trestle.....	Pile trestle.....	26 ft., 3 in., " "	" "
Southern Division:				
94, Concord.....	Rolled beam stringer.	Deck plate girder.....	17 ft., 2 tracks.	" "
A, 379, East Candia.....	Stone box culvert.....	Pile Trestle.....	83 ft., 1 track.	" "
410, Everett.....	Pony truss wood.....	Pony, truss, wood.....	53 ft., 11 in., " "	" "
W. N. & P. Division:				
44, Sandown.....	Pile trestle.....	Pile trestle.....	39 ft., 11 in., " "	" "
45, Fremont.....	Pile trestle.....	Pile trestle.....	59 ft., 11 in., " "	" "
47, Fremont.....	Pratt truss through.	Lattice through.....	80 ft., " " "	" "
72, South Merrimack.....	Pile trestle.....	Pile trestle.....	30 ft., 2 in., " "	" "
75, Richardson.....	Wood stringer.....	Wood stringer.....	14 ft., " " "	" "
Concord Division:				
56, South Danbury.....	Wood stringer.....	Wood stringer.....	18 ft., " " "	" "
58, South Danbury.....	Wood stringer.....	Keyed stringer.....	19 ft., " " "	" "
182, Hillsborough.....	Lattice through.....	Lattice through.....	208 ft., 1 in., " "	" "
190, Elmwood.....	Wood stringer.....	Keyed stringer.....	20 ft., " " "	" "
209, Franklin.....	Framed trestle.....	Framed trestle.....	153 ft., " " "	" "
A, 210, Hill.....	Wash-out.....	Wood stringer.....	13 ft., " " "	" "
White Mountains Division:				
19, Belmont Junction.....	Wood stringer.....	Wood stringer.....	11 ft., 8 in., " "	" "
20, East Tilton.....	Framed trestle.....	Pile trestle.....	72 ft., 4 in., " "	" "
54, North Haverhill.....	Wood stringer.....	Wood stringer.....	12 ft., " " "	" "
102, Woodsville.....	Burr truss deck.....	Iron deck.....	328 ft., 9 in., " "	American Bridge Co.
217, Base.....	Framed Trestle.....	Framed trestle.....	28 ft., " " "	Boston & Maine Railroad.
A, 263, Berlin.....	Framed trestle.....	Plate girder deck.....	86 ft., 8 in., " "	New England Structure Co.
B, 266, Berlin.....	.....	Plate girder through.....	34 ft., 7 in., " "	Baltimore Bridge Co.

BRIDGES EXTENSIVELY REPAIRED OR STRENGTHENED DURING THE YEAR.

NUMBER AND LOCATION.	Description of bridge.	Description of work done.
Eastern Division..... 222, Dover Point.	Pile trestle and draw.	New ties on 500 ft. of bridge.
Western Division: 62, Newmarket.	Iron stringer.....	New ties and guards.
Fitchburg Division: 340 Greenville	Howe truss deck.....	Additional floor beams.
W. N. & P. Division: 63, West Rochester..	Pratt truss through...	[trusses. Arches added to reinforce
Concord Division: 86, West Canaan 213, Franklin Junct'n.	Trussed stringer..... Lattice with trestle (app.)	Pile bent at center. New ties on approaches.
White Mountains Div: 157, Tioga.....	Pile trestle.....	New side stringer.

BRIDGES ELIMINATED DURING THE YEAR, SPECIFYING LOCATION AND MANNER.

NUMBER AND LOCATION.	Span.	Manner of Elimination.
White Mountains Div.: 192, Bethlehem Junct.	69 feet.....	Pile trestle filled.
193, " "	54 feet ..	" " "
227, Profile House.....	64 feet, 7 inches...	Framed trestle filled.

Total length of pile and trestle bridging, 15,100 feet, 9 inches.

ACCIDENTS TO PERSONS.

	From causes beyond their own control in New Hampshire.		From their own misconduct or carelessness in New Hampshire.		Total in New Hampshire.		Total on all lines operated.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers..	1	6	.....	.....	1	6	1	10
Employees..	1	.....	11	2	12	2	62	68
Others .....	.....	.....	24	.....	24	.....	112	14
Total	2	6	35	2	37	8	175	92

STATEMENT OF EACH ACCIDENT IN NEW HAMPSHIRE.

July 10. Tilton. G. E. McConnell, conductor, fell across track and was run over and fatally injured.

July 10. Hooksett. A boy, son of Hiram Young, was struck by electric car and killed.

July 24. Manchester. Carmele Sansoucie, a boy thirteen years of age, in avoiding freight train stepped in front of passenger train and was instantly killed.

August 5. Dover. J. D. Pierce, freight brakeman, riding on top of train, was thrown to the ground by reason of train breaking apart and fatally injured.

August 27. New Durham. Unknown man walking on track was struck by train and killed.

September 3. Hooksett. Unknown man was found dead beside tracks.

September 13. North Hampton. Thomas McCaffery, trespasser, was run over by train and killed.

September 25. Portsmouth. E. F. Gilman, conductor, had his head caught between end sills and crushed while shifting cars.

October 2. Winnisquam. Bert L. Batchelder was struck by engine and fatally injured.

October 14. Woodsville. George A. Merrill, car inspector, was instantly killed; circumstances unknown.

October 24. Dover. William Lawless, a boy, jumped from moving freight train; was run over and instantly killed.

October 29. Manchester. William J. St. Clair, yard brakeman, was instantly killed; presumably by falling from car.

November 11. Tilton. Body of Fred M. Hall found in canal. It is supposed he attempted to board a train sometime during the night.

November 13. Salmon Falls. Unknown man was struck by train and instantly killed.

November 17. Derry. D. M. Sweeney, trespasser, was run over by train and fatally injured.

November 16. Dover. John Mahr, trespasser, was run over and fatally injured.

November 17. Concord. E. W. Greenwood, employee, fractured his skull by striking overhead bridge. He died the same day.

November 20. Concord. M. E. Davis, employee, was struck by engine and fatally injured.

December 8. Nashua. E. N. Farrell, section foreman, was run over by train and fatally injured.

December 10. Troy-Keene. W. H. Chase, brakeman, was struck and fatally injured.

December 14. Manchester. Unknown woman was struck by engine while crossing track and killed.

December 14. Pittsfield. Dr. E. L. Carr was fatally injured at Emerson Crossing.

January 1. Rochester. Owen Kirley, trespasser, was struck by engine and instantly killed.

January 5. Woodsville. F. R. Stuart, employee, was struck by train and fatally injured.

January 13. Meredith. Body of unknown man was found beside track. It is supposed he fell from passenger train.

January 7. Canaan. Frank Bill was struck by engine and instantly killed. Engineman thought he struck man on crossing between bridge and West Canaan.

January 26. Nashua Junction. Body of William J. McKay was found under car in Nashua west yard; particulars unknown.

February 4. Westwood. Body of unknown man found.

February 15. Rochester yard. John Gilbert, laborer, was struck by car and instantly killed.

February 25. East Concord. Miss Mary B. Chandler, walking on track, was struck by engine and instantly killed.

February 25. Concord. W. A. Moufette, brakeman, standing on track, was struck by shifter and instantly killed.

February 27. Nashua Junction. A. B. Corey, trespasser, was struck by engine just west of Main street and instantly killed.

March 12. Warner. J. A. P. Chase, brakeman, slipped under engine and his leg was severed from his body.

May 3. North Franklin. Unknown man, trespasser, was struck by engine and killed.

May 6. Dover. Body of unknown man found beside track.

May 31. Rollinsford. Peter Perron, trespasser, walking on track, was struck by train and killed.

June 3. Nashua Junction. Henry M. Adams, yard conductor, was caught between engine and caboose and fatally injured.

June 5. Lebanon. Arthur Simpson, trespasser, was found dead beside track.

June 20. Thornton. Freight cars derailed, throwing passenger train against side of bridge and scattering lumber through coach. Mrs. James Caldon was instantly killed and six more were somewhat injured.

PROPER ADDRESS OF THE COMPANY.

BOSTON & MAINE RAILROAD,

BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Lucius Tuttle, Boston, Mass.; second vice-president and general traffic manager, William F. Berry, Boston, Mass.; third vice-president and general manager, Frank Barr, Boston, Mass.; fourth vice-president and general auditor, William J. Hobbs, Boston, Mass.; assistant general auditor, Stuart H. McIntosh, Boston, Mass.; treasurer, Herbert E. Fisher, Boston, Mass.; assistant treasurer, John F. Webster, Concord, N. H.; clerk of corporation, William B. Lawrence, Boston, Mass.; general counsel, Richard Olney, Boston, Mass.; general solicitor, Edgar J. Rich, Boston, Mass.; assistant general manager, Charles E. Lee, Boston, Mass.; general superintendent, Daniel W. Sanborn, Boston, Mass.; general passenger and ticket agent, Dana

J. Flanders, Boston, Mass.; freight traffic manager, Michael T. Donovan, Boston, Mass.; export freight traffic manager, Amos S. Crane, Boston, Mass.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Lucius Tuttle, Boston, Mass.; Samuel C. Lawrence, Medford, Mass.; Richard Olney, Boston, Mass.; Alvah W. Sulloway, Franklin, N. H.; Joseph H. White, Brookline, Mass.; Walter Hunnewell, Wellesley, Mass.; Henry R. Reed, Boston, Mass.; Lewis Cass Ledyard, New York, N. Y.; Henry M. Whitney, Brookline, Mass.; Henry F. Dimock, New York, N. Y.; William Whitney, Holyoke, Mass.; Charles M. Pratt, New York, N. Y.; Alexander Cochrane, Boston, Mass.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

LUCIUS TUTTLE.
SAMUEL C. LAWRENCE,
RICHARD OLNEY,
HENRY R. REED,
HENRY M. WHITNEY,
H. F. DIMOCK,
A. W. SULLOWAY,
WILLIAM WHITING,
WALTER HUNNEWELL,
JOSEPH H. WHITE,
LEWIS CASS LEDYARD.

Directors.

HERBERT E. FISHER.

Treasurer.

FRANK BARR.

Third Vice-President and General Manager.

STATE OF MASSACHUSETTS.

SUFFOLK, ss. Boston, Mass., September 8, 1904. Then personally appeared the above-named Lucius Tuttle, Samuel C. Lawrence, Richard Olney, Henry R. Reed, Henry M. Whitney, H. F. Dimock, A. W. Sulloway, William Whiting, Joseph H. White, Walter Hunnewell, and Lewis Cass Ledyard, directors of the Boston & Maine Railroad, and Herbert E. Fisher, treasurer, and Frank Barr, third vice-president and general manager, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

WILLIAM B. LAWRENCE.

Justice of the Peace.

REPORT

OF THE

CONCORD & CLAREMONT, N. H., RAILROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.

Rental received from lease of road	\$22,500.00
Interest on funded debt	22,500.00
Net divisible income	nothing
Amount of deficit June 30, 1903	\$35,439.34
Total deficit June 30, 1904	\$35,439.34

GENERAL BALANCE SHEET.

Cost of road	\$1,131,206.38
Profit and loss balance—deficit	35,439.34
Total	\$1,166,645.72

Capital stock, common	\$412,400.00
Funded debt	500,000.00
Total current liabilities	254,245.72
Total	\$1,166,645.72

CAPITAL STOCK.

Capital stock authorized by law, common	\$412,400.00
Capital stock authorized by votes of company, common	412,400.00
Capital stock issued and outstanding, common	412,400.00
Number of shares issued and outstanding, common	412,400

Number of stockholders, common	8
Number of stockholders in New Hampshire, common	7
Amount of stock held in New Hampshire, common	409,200.00

PROPER ADDRESS OF THE COMPANY.

CONCORD & CLAREMONT, N. H., RAILROAD,
1023 OLD SOUTH BUILDING, BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Alvah W. Sulloway, Franklin, N. H.; treasurer, George U. Crocker, 1023 Old South Building, Boston, Mass.; clerk of corporation, George W. Stone, Andover, N. H.; assistant treasurer, Horace E. Chamberlin, Concord, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Alvah W. Sulloway, Warren F. Daniell, Franklin, N. H.; Charles O. Stearns, Augustus E. Scott, Boston, Mass.; Frank P. Vogl, Claremont, N. H.; William F. Richards, Newport, N. H.; Charles H. Fish, Dover, N. H.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

ALVAH W. SULLOWAY,
President and Director.

GEORGE U. CROCKER,
Treasurer.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, SS. October 20, 1904. Then personally appeared the above-named Alvah W. Sulloway, president, and George U. Crocker, treasurer, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

G. GLENN CROCKER, JR.,
Justice of the Peace.

REPORT

OF THE

CONCORD & PORTSMOUTH RAILROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.

Rental received from lease of road	\$25,000.00
Salaries and maintenance of organization	350.00
Advertising	5.00
Net divisible income	\$24,645.00
Dividends declared, 7 per cent on common stock	24,500.00
Surplus for the year ending June 30, 1904	\$145.00
Amount of surplus June 30, 1903	4,213.51
Total surplus June 30, 1904	\$4,358.51

GENERAL BALANCE SHEET.

Cost of road	\$350,000.00
Cash	4,358.51
Total	\$354,358.51
Capital stock, common	\$350,000.00
Profit and loss balance—surplus	4,358.51
Total	\$354,358.51

CAPITAL STOCK.

Capital stock authorized by law, common	\$500,000.00
Capital stock authorized by votes of company, common	350,000.00
Capital stock issued and outstanding, common	350,000.00

Number of shares issued and outstanding, common	3,500
Number of stockholders, common	199
Number stockholders in New Hampshire, common	168
Amount stock held in New Hampshire, common	\$313,200.00

RAILROAD OWNED.

Length of main line	40.5 miles
Length of branch line	7.0 "
Total length of track owned	47.5 miles

PROPER ADDRESS OF THE COMPANY.

CONCORD & PORTSMOUTH RAILROAD.

MANCHESTER, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, John J. Pickering, Portsmouth, N. H.; vice-president, William Peirce, Portsmouth, N. H.; treasurer, W. Byron Stearns, Manchester, N. H.; clerk of corporation, Wallace Hackett, Portsmouth, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

John J. Pickering, William A. Peirce, Wallace Hackett, Portsmouth, N. H.; Walter M. Parker, Manchester, N. H.; Joseph B. Walker, Samuel C. Eastman, Concord, N. H.

I hereby certify that the statements contained in the foregoing return are full, just, and true.

W. BYRON STEARNS.

Treasurer.

STATE OF NEW HAMPSHIRE.

HILLSBOROUGH, ss. October 21, 1904. Then personally appeared the above-named W. Byron Stearns and made oath that the foregoing certificate by him subscribed is, to the best of his knowledge and belief, true.

Before me.

HENRY M. PUTNEY.

Justice of the Peace.

REPORT

OF THE

CONNECTICUT RIVER RAILROAD COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.

Rental received from lease of road	\$349,065.00
Expenses and charges upon income accrued during the year:	
Salaries and maintenance of organization	\$2,000.00
Interest on funded debt	\$4,065.00
Total expenses and charges upon income	86,065.00
Dividends declared, 10 per cent on common stock	263,000.00
Surplus for the year ending June 30, 1904	nothing
Amount of deficit June 30, 1903	\$193,884.84
Total deficit June 30, 1904	\$193,884.84

GENERAL BALANCE SHEET.

Cost of road	\$3,597,366.50
Cost of equipment	455,977.66
Land in:	
Chicopee and Brightwood, Mass.	\$39,175.00
Greenfield, Mass.	75.00
	39,250.00
Stock of:	
Vermont Valley Railroad Company of 1871	\$579,220.00
Hampden Park	23,987.50
	603,207.50
Total permanent investments	\$4,695,801.66

Cash	\$28,237.31	
Due from solvent companies and individuals	159,552.89	
Total cash and current assets		187,790.20
Profit and loss balance—deficit		193,884.84
Total		\$5,077,476.70
Capital stock, common		\$2,630,000.00
Funded debt		2,263,150.00
Current liabilities:		
Dividends not called for	\$430.00	
Matured interest coupons unpaid (including coupons due July 1)	23,098.50	
Boston & Maine Railroad	146,906.05	
Total current liabilities		\$170,434.55
Interest accrued and not yet due		13,333.34
Fund for corporation expenses		558.81
Total		\$5,077,476.70
PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING THE YEAR.		
Permanent additions and improvements by Boston & Maine Railroad		\$33,626.72
Other expenditures charged to property accounts		33,701.72
Net addition to property accounts for year		\$67,328.44
CAPITAL STOCK.		
Capital stock authorized by law, common		\$2,670,000.00
Capital stock authorized by votes of company, common		2,630,000.00
Capital stock issued and outstanding, common		2,630,000.00
Number of shares issued and outstanding, common		26,300
Number of stockholders, common		954
Number of stockholders in New Hampshire, common		28
Amount of stock held in New Hampshire, common		\$68,200.00

FUNDED DEBT.

DESCRIPTION OF BONDS, ETC.	Rate of interest.	Date of maturity.	Amount outstanding.	Interest paid during year.
10-year "Scrip".....	4%	Jan. 1, 1903	\$4,150.00	\$121.00
50-year "Gold"	4	Sep. 1, 1943	1,000,000.00	40 040.00
20-year "Gold"	3%	Jan. 1, 1921	290,000.00	10,150.00
20-year "Gold"	3%	Jan. 1, 1923	969,000.00	33,915 00
Total			\$2,263,150.00	\$84,226.00

RAILROAD OWNED.

Length of main line in New Hampshire	23.21 miles
Total length of main line	74.00 "
Total length of branch line	5.85 "
Total length of line owned in New Hampshire	23.21 "
Total length of line owned	79.85 "
Total length of second track	36.00 "
Total length of third track . . . . .	.80 "
Length of side track, etc., in New Hampshire	5.20 "
Total length of side track, etc.	64.74 "
Total length of track owned in New Hampshire	28.41 "
Total length of track owned	181.39 "

PROPER ADDRESS OF THE COMPANY.

CONNECTICUT RIVER RAILROAD COMPANY.

SPRINGFIELD. MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, William Whiting, Holyoke, Mass.; treasurer and clerk of corporation, George R. Yerrall, Springfield, Mass.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

William Whiting, Holyoke, Mass.; Oscar Edwards, Northampton, Mass.; James H. Williams, Bellows Falls, Vt.; John H. Albin, Concord, N. H.; Edmund P. Kendrick, Springfield, Mass.; Seth M. Richards, Newport, N. H.; Joseph W. Stevens, Greenfield, Mass.; Lucius Tuttle, Boston, Mass.; William W. McCleuch, Springfield, Mass.; George H. Ball,* Boston, Mass.

* Deceased.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

WILLIAM WHITING,
OSCAR EDWARDS,
EDMUND P. KENDRICK,
JOSEPH W. STEVENS,
WILLIAM W. McCLEUCH,
Directors.

GEORGE R. YERRALL,
Treasurer.

STATE OF MASSACHUSETTS.

HAMPDEN, ss. September 3, 1904. Then personally appeared the above-named William Whiting, Oscar Edwards, Edmund P. Kendrick, Joseph W. Stevens, William W. McCleuch, and George R. Yerrall, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

STUART M. ROBSON,
Justice of the Peace.

REPORT

OF THE

CONCORD & MONTREAL RAILROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Rental received from lease of road:	
October, 1903	\$127,685.25
January, 1904	127,685.25
April, 1904	130,310.25
July, 1904	130,310.25
	\$515,991.00
Interest received on bonds from Boston & Maine Railroad	286,170.00
Gross income	\$802,161.00
Interest on funded debt	286,170.00
Net divisible income	\$515,991.00
Dividends declared, 7 per cent on common stock	515,991.00
Surplus for the year ending June 30, 1904	nothing
Amount of surplus June 30, 1903	\$43,080.62
Materials and supplies Concord Street Railway, \$34,193.63; premium on sale of 2,500 shares capital stock sold at auction for purchase of Concord Street Railway, \$213,963.78	\$248,113.41
Purchased 5 shares old B., C. & M. stock, by order of supreme court New Hampshire, \$888.50; Worthless stocks of old B., C. & M. R. R., charged off by vote of directors, \$77,852.40	78,740.90
Net amount credited to profit and loss	169,372.51
Total surplus June 30, 1904	\$212,453.13

GENERAL BALANCE SHEET.	
Cost of road	\$12,293,133.46
Cost of Concord & Manchester electric branch	471,478.60
Cost of Concord Street Railway branch	447,246.81
Total	\$13,211,858.87
Bonds of sundry corporations	595,042.59
Other permanent property	928,492.16
Total permanent investments	\$14,735,393.62
Cash	\$2,002.76
Boston & Maine Railroad, Concord & Montreal Railroad, Concord Street Railway account	16,716.97
Boston & Maine Railroad, Concord & Montreal Railroad, Manchester & Milford Branch	1,432.63
Boston & Maine Railroad, Concord & Montreal Railroad lease ac- count	51,864.83
Due from solvent companies and individuals, Pemigewasset Valley Railroad	12,772.92
Total cash and current assets	84,790.11
Total	\$14,820,183.73
Capital stock, class 1	\$800,000.00
Capital stock, class 2	540,400.00
Capital stock, class 3	459,600.00
Capital stock, class 4	5,647,600.00
Total capital stock	\$7,447,600.00
Funded debt, mortgage bonds	5,500,500.00
Debenture bonds	1,512,000.00
Current liabilities:	
Loans and notes payable	\$101,600.00
Audited vouchers and accounts, B., C. & M. organization ex- pense account	636.81
Dividends not called for, old B., C. & M. Railroad	557.00
Matured interest coupons unpaid, old B., C. & M. Railroad	428.00
Miscellaneous accrued liabilities:	
Advances by Boston & Maine Railroad	16,675.16

B. & M. R. R. account Concord & Manchester Electric Railway	\$9,728.60	
B. & M. R. R., account Concord & Montreal Railroad improvement account	17,705.03	
Total current liabilities		\$147,630.60
Profit and loss balance—surplus		212,453.13
Total		\$14,820,183.73
PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING THE YEAR.		
Expenditures made by the Boston & Maine Railroad for improvements of the Concord & Montreal Railroad for year ending June 30, 1904:		
Land at Weirs (William E. Spaulding)		\$975.00
Cattle pass, Jefferson (E. E. Paschal)		36.00
New passenger station, Pittsfield	\$5,929.10	
Less restoration value old station	3,000.00	
		2,929.10
New machinery and tools for extension of erecting shop, Concord		13,210.00
Rebuilding bridge, No. 46, Bridgewater		588.67
Rebuilding bridge, No. 102, Woodsville	\$66,379.08	
Less restoration value old bridge	22,000.00	
		44,379.08
Raising grade at Garvin's Falls		6,190.89
Side tracks laid during the year		4,265.13
		72,574.37
Less proceeds sale of:		
Land at Gilford, to Sarah A. Barker	\$175.00	
Buildings at Whitefield, from property purchased of M. D. M. Quimby	150.00	
		325.00
		\$72,249.37
Also charged to improvement fund amount paid for five shares B., C. & M. R. R. stock purchased (profit and loss account)		
		888.50
Total improvement account		\$73,137.87
Concord & Manchester Electric Branch		\$33,166.98

Total cost for road, franchise, and property of Concord Street Railway, including change of road from narrow to standard gauge, change of equipment, and cost of new equipment, also all park property, steamboats, and rights of Contoocook River Navigation and Improvement Company, all being now a part of the Concord & Montreal property to June 30, 1904	\$447,246.81
(As authorized by legislature of New Hampshire, January 29, 1903.)	
Stock of Concord & Montreal Railroad sold at auction for purchase and reconstruction of Concord Street Railway netted corporation	463,963.78
Unexpended balance	\$16,716.97

CAPITAL STOCK.

Capital stock authorized by law, common	\$8,050,000.00
Capital stock authorized by votes of company, common	7,450,000.00
Capital stock issued and outstanding, common	7,447,600.00
Number of shares issued and outstanding, common	74,476

FUNDED DEBT.

DESCRIPTION OF BONDS, ETC.	Rate of interest.	Date of maturity.	Amount outstanding.	Interest paid during the year.
Boston, Concord & Montreal Railroad, mortgage bonds.....	.....	Old.	\$500.00	.....
Boston, Concord & Montreal Railroad, mortgage bonds....	6%	1911	500,000.00	30,000.00
Concord & Montreal Railroad, first mortgage bonds.....	4%	1920	5,000,000.00	200,000.00
Concord & Montreal Railroad, debenture bonds.....	4%	1920	650,000.00	26,000.00
Concord & Montreal Railroad, debenture bonds.....	3½%	1920	400,000.00	14,000.00
Concord & Montreal Railroad, debenture bonds.....	3½%	1920	462,000.00	16,170.00
Total.....	.....	.....	\$7,012,500.00	286,170.00

RAILROAD OWNED.

Length of main line from Nashua to Groveton .	181.07 miles-
Length of branch lines	197.90 "
Total length of line owned in New Hampshire .	363.83 "
Total length of line owned	378.97 "
Length of second track	34.57 "
Concord & Manchester Electric Branch (street railway)	27.88 "
Length of side track	151.27 "
Total length of track owned in New Hampshire .	577.55 "
Total length of track owned	592.69 "

PROPER ADDRESS OF THE COMPANY.

THE CONCORD & MONTREAL RAILROAD.

CONCORD, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Benjamin A. Kimball, Concord, N. H.; treasurer, John F. Webster, Concord, N. H.; clerk of corporation, Frank S. Streeter, Concord, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Benjamin A. Kimball, George M. Kimball, Benjamin C. White, Concord, N. H.; Walter M. Parker, Noah S. Clark, Arthur H. Hale, Frank P. Carpenter, Manchester, N. H.; Hiram A. Tuttle, Pittsfield, N. H.; William H. Moses, Tilton, N. H.; Sumner Wallace, Rochester, N. H.; Hiram N. Turner, St. Johnsbury, Vt.; Charles E. Morrison, Boston, Mass.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

BENJAMIN A. KIMBALL,

President.

JOHN F. WEBSTER,

Treasurer.

STATE OF NEW HAMPSHIRE.

MERRIMACK, ss. Concord, October, 1904. Then personally appeared the above-named Benjamin A. Kimball, president, and John F. Webster, treasurer, of said Concord & Montreal Railroad and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

GEORGE E. CUMMINGS,

Justice of the Peace.

REPORT

OF THE

FITCHBURG RAILROAD COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Rental received from lease of road	\$1,852,496.54
Interest on bank deposit	1,695.72
Boston & Maine Railroad	23,878.35
Gross income	\$1,878,070.61
Expenses and charges upon income accrued during the year:	
Salaries and maintenance of organization	\$8,744.11
Interest on funded debt	833,161.67
Interest and discount on unfunded debts and loans	144,334.87
Commission placing notes	22,938.47
Contingent fund	891.49
Total expenses and charges upon income	1,010,070.61
Net divisible income	\$868,000.00
Dividends declared, 5 per cent on preferred stock	868,000.00
Surplus for the year ending June 30, 1904	nothing
Amount of surplus June 30, 1903	\$742,463.47
Net disbursements account business prior to July 1, 1900	11,307.98
Total surplus June 30, 1904	\$731,155.49
GENERAL BALANCE SHEET.	
Cost of road	\$40,131,779.09
Cost of equipment	3,828,354.47
Bonds of Vermont and Massachusetts Railroads	772,000.00
Improvements	2,250,040.36
Total permanent investments	\$46,982,173.92

Cash	\$8,654.24	
Due from solvent companies and individuals	60,805.00	
Other cash assets	323,422.70	
Total cash and current assets		\$392,881.94
Other assets and property:		
Rental accrued not due	\$238,934.39	
Boston & Maine Railroad, lessee	936,034.06	
Total miscellaneous assets		1,174,968.45
Total		\$48,550,024.31
Capital stock, common		\$7,000,000.00
Capital stock, preferred		17,360,000.00
Total capital stock		\$24,360,000.00
Funded debt		19,010,000.00
Current liabilities:		
Loans and notes payable	\$3,932,000.00	
Audited vouchers and accounts	56,484.32	
Dividends not called for	1,391.50	
Matured interest coupons unpaid (including coupons due July 1)	64,145.00	
Boston & Maine Railroad lease improvements	155,783.61	
Total current liabilities		\$4,209,804.43
Accrued liabilities:		
Interest accrued and not yet due	\$238,934.39	
Boston, Barre & Gardner Railroad stockholders	130.00	
Total accrued liabilities		\$239,064.39
Profit and loss balance—surplus		\$731,155.49
Total		\$48,550,024.31

PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS
DURING THE YEAR.

Additions to construction account:	
Bridging	\$2,845.63
Superstructure, including rails	4,104.31
Passenger and freight stations, woodsheds, and water-stations	1,412.52

Elimination of grade crossings	\$206.75	
Cheshire Railroad construction	93.54	
Sidings and yard extensions	1,430.03	
Improvements in process—incomplete	43,384.38	
Total additions to construction account		\$53,477.16
Land, land damages, and fences, release of crossing Hoosick, N. Y.		250.00
Total additions to property accounts		\$53,727.16
Land, land damages, and fences:		
Award, land taken by town of Winchendon, Mass.	\$100.00	
Award, land taken by village of Saratoga Springs, N. Y.	400.00	
Total deductions from property accounts		500.00
Net addition to property accounts for year		\$53,227.16
CAPITAL STOCK.		
Capital stock authorized by law, common	\$7,000,000.00	
Capital stock authorized by law, preferred	17,360,000.00	
Total capital stock authorized by law		\$24,360,000.00
Capital stock authorized by votes of company, common	\$7,000,000.00	
Capital stock authorized by votes of company, preferred	17,360,000.00	
Total capital stock authorized by vote		\$24,360,000.00
Capital stock issued and outstanding, common	\$7,000,000.00	
Capital stock issued and outstanding, preferred	17,360,000.00	
Total capital stock outstanding		\$24,360,000.00
Number of shares issued and outstanding, common	70,000	
Number of shares issued and outstanding, preferred	173,600	
Total number of shares outstanding		243,600

Number of stockholders, common	2
Number of stockholders, preferred	6,103
Total number of stockholders	6,105
Number of stockholders in New Hampshire, preferred	681
Amount of stock held in New Hampshire, preferred	\$816,800.00

FUNDED DEBT.

DESCRIPT'N OF BONDS, ETC.	Rate of interest.	Date of maturity.	Amount outstanding.	Interest paid during year.
Fitchburg Railroad.....	5%	Oct. 1, 1901	\$1,600.00	.....
" "	4%	Mar. 1, 1904	1,000.00	19,980.00
" "	4%	June 1, 1905	500,000.00	19,980.00
" "	4%	Feb. 1, 1907	5,000,000.00	200,000.00
" "	4%	Apr. 1, 1907	1,500,000.00	59,720.00
" "	5%	May 1, 1908	2,000,000.00	100,225.00
" "	4%	June 1, 1920	500,000.00	20,240.00
" "	4%	Mar. 1, 1903	.....	60.00
" "	5%	Sept. 1, 1903	.....	9,450.00
" "	5%	Nov. 1, 1903	1,000.00	26,150.00
" "	5%	Dec. 1, 1903	.....	13,400.00
" "	4½%	May 1, 1914	500,000.00	22,522.50
" "	4%	Mar. 1, 1915	1,359,000.00	54,480.00
" "	4%	July 1, 1916	500,000.00	19,620.00
" "	4%	Mar. 1, 1927	2,750,000.00	109,880.00
" "	4%	Jan. 1, 1928	1,450,000.00	57,780.00
" "	3½%	Oct. 1, 1920	500,000.00	17,500.00
" "	3½%	Oct. 1, 1921	1,775,000.00	62,387.50
Troy & Boston, 1st mort.....	7%	July 1, 1924	573,000.00	40,110.00
Brookline & Pepperell.....	5%	Dec. 1, 1911	100,000.00	5,225.00
Total			\$19,010,000.00	\$58,610.00

RAILROAD OWNED.	
Length of main line in New Hampshire. . .	43.09 miles
Total length of main line	249.05 "
Length of branch line in New Hampshire . . .	35.43 "
Total length of branch line	145.09 "
Total length of line owned in New Hampshire . .	78.52 "
Total length of line owned	394.14 "
Total length of second track	127.22 "
Total length of third track	3.90 "
Total length of fourth track	2.02 "
Length of side track, etc., in New Hampshire . .	27.37 "
Total length of side track, etc.	251.34 "
Total length of track owned in New Hampshire	105.89 "
Total length of track owned	778.62 "

PROPER ADDRESS OF THE COMPANY.
 FITCHBURG RAILROAD COMPANY,
 BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Moses Williams, Boston, Mass.; treasurer, Daniel A. Gleason, Boston, Mass.; clerk of corporation, Paul Crocker, Boston, Mass.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Gordon Abbott, Boston, Mass; Brigham N. Bullock, Fitchburg, Mass.; Charles T. Crocker, Fitchburg, Mass.; William H. Hollister, New York, N. Y.; Charles Lowell, Boston, Mass.; William E. Rice, Worcester, Mass.; Joseph B. Russell, Belmont, Mass.; Francis Smith, Rockland, Me.; Frederick J. Stimson, Dedham, Mass.; George R. Wallace, Fitchburg, Mass.; Charles E. Ware, Fitchburg, Mass.; Moses Williams, Brookline, Mass.; Robert Winsor, Boston, Mass.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

MOSES WILLIAMS,
 JOSEPH B. RUSSELL,
 ROBERT WINSOR,
 CHARLES E. WARE,
 B. N. BULLOCK,
 GEORGE R. WALLACE,
 C. T. CROCKER,
 GORDON ABBOTT,

Directors.

DANIEL A. GLEASON,
Treasurer.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. September 7, 1904. Then personally appeared the above-named directors of the Fitchburg Railroad Company, namely, Moses Williams, J. B. Russell, Robert Winsor, Charles E. Ware, B. N. Bullock, George R. Wallace, C. T. Crocker, Gordon Abbott, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

REGINALD CARY HEATH.

Justice of the Peace.

REPORT

OF THE

FRANKLIN & TILTON RAILROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL BALANCE SHEET.	
Cost of road	\$264,043.47
Capital stock, common	\$250,000.00
Due Boston & Maine Railroad, account expenditures new side track and freight station .	14,043.47
Total	\$264,043.47
PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING THE YEAR.	
Additions to construction account:	
Superstructure, including rails	\$60.23
CAPITAL STOCK.	
Capital stock authorized by law, common	\$300,000.00
Capital stock authorized by votes of company, common	275,000.00
Capital stock issued and outstanding, common .	250,000.00
Number of shares issued and outstanding, common	2,500
Number of stockholders, common	2
Number of stockholders in New Hampshire, common	2
Amount stock held in New Hampshire, common .	\$250,000.00

RAILROAD OWNED.

Total length of main line	5 miles
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GENERAL REMARKS AND EXPLANATIONS.

The Franklin & Tilton Railroad was leased to the Concord & Montreal Railroad October 8, 1895, for the term of 91 years from April 1, 1895, at the nominal sum of one dollar annually, with such additional sums as may be necessary to keep up the organization of the lessor. On the same date this lease was assigned to the Boston & Maine Railroad, which corporation now operates the Franklin & Tilton Railroad, under said lease, and all information concerning the operation of the said lessor railroad will be found embodied in the report of the Boston & Maine Railroad.

PROPER ADDRESS OF THE COMPANY.

FRANKLIN & TILTON RAILROAD,

FRANKLIN FALLS, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Benjamin A. Kimball, Concord, N. H.; treasurer, Frank Proctor, Franklin Falls, N. H.; clerk of corporation, Edward G. Leach, Franklin Falls, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Benjamin A. Kimball, Concord, N. H.; Samuel S. Kimball,* Concord, N. H.; Alvah W. Sulloway, Franklin Falls, N. H.; Frank Jones,* Portsmouth, N. H.; Horace E. Chamberlin, Concord, N. H.; Alfred E. Tilton, Tilton, N. H.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

BENJAMIN A. KIMBALL,
A. W. SULLOWAY,
Directors.

FRANK PROCTOR,
Treasurer.

* Deceased.

STATE OF NEW HAMPSHIRE.

MERRIMACK, ss. September 14, 1904. Then personally appeared the above-named Benjamin A. Kimball, Alvah W. Sulloway, and Frank Proctor, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

EDWARD G. LEACH,
Justice of the Peace.

REPORT

OF THE

MAINE CENTRAL RAILROAD COMPANY.

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Gross earnings from operation	\$6,912,981.70
Operating expenses	5,101,543.35
Net earnings from operation	\$1,811,438.35
Dividends received on stocks owned:	
Boston & Maine Railroad	\$329.00
Portland & Ogdensburg Railway	3,963.60
Bridgeton & Saco River Railroad	200.00
St. John Bridge & Railway Extension Company	3,000.00
Interest received on bonds owned:	
Maine Central consolidation, 7 per cent	\$35.00
Washington County Railway Company, 3½ per cent	4,375.00
Miscellaneous income, less expense:	
Rent of real estate	13,589.60
Interest and discount	53,147.91
Total income from sources other than operation	78,640.11
Gross income above operating expenses	\$1,890,078.46
Charges upon income accrued during the year:	
Interest on funded debt	\$643,110.00
Taxes	240,000.00

Rentals of leased roads:		
European & North American Railway	\$165,500.00	
Belfast & Moosehead Lake Railroad	36,000.00	
Dexter & Newport Railroad	13,350.00	
Eastern Maine Railway	9,500.00	
Portland & Ogdensburg Railway	182,300.76	
Dexter & Piscataquis Railroad	13,350.00	
Upper Coös Railroad	61,375.00	
Hereford Railway	64,500.00	
Paid trustees sinking funds	29,440.00	
Total charges and deductions from income		\$1,458,425.76
Dividends declared during the year payable on—		
October 1, 1903 (No. 66), 1¾ per cent on \$4,976,400, common	\$87,087.00	
January 1, 1904 (No. 67), 1¾ per cent on \$4,976,400, common	87,087.00	
April 1, 1904 (No. 68), 1¾ per cent on \$4,976,400, common	87,087.00	
July 1, 1904 (No. 69), 1¾ per cent on \$4,976,400, common	87,087.00	
Total dividends declared		348,348.00
Surplus for the year ending June 30, 1904		\$83,304.70
Amount of Surplus June 30, 1903		286,093.76
		\$369,398.46
Miscellaneous items	\$2,979.19	
Surplus for the year transferred to contingent fund	83,304.70	
Net amount credited to profit and loss		86,283.89
Total surplus June 30, 1904		\$283,114.57
EARNINGS FROM OPERATION.		
Gross receipts from passengers		\$2,371,965.05
Deductions:		
Tickets redeemed	\$3,374.02	
Excess fares refunded	7,220.06	
Other payments	911.58	
Total deductions		11,505.66
Net revenue from passengers		\$2,360,459.39

From mails	\$187,587.05	
From express	126,661.04	
From extra baggage and storage	44,250.41	
Other earnings, passenger service:		
Miscellaneous	13,176.51	
		\$371,675.01
Total earnings, passenger service		\$2,732,134.40
Freight service:		
Gross receipts from freight		\$4,076,448.36
Overcharge to shippers		56,616.68
Net revenue from freight		\$4,019,831.68
Other earnings, freight service:		
Miscellaneous		42,818.92
Total earnings, freight service		\$4,062,650.60
Total passenger and freight earnings		\$6,794,785.00
Other earnings from operation:		
Rentals from tracks, yards, and terminals	\$27,800.00	
Rentals from other property	3,203.73	
Steamboat earnings	56,697.04	
Wharfage and pierage	30,495.93	
Total other earnings		118,196.70
Gross earnings from operation		\$6,912,981.70
EXPENSES OF OPERATION.		
General expenses:		
Salaries of general officers		\$37,366.76
Salaries of clerks and attendants		56,958.20
General office expenses and supplies		16,495.50
Insurance		52,000.00
Law expenses		19,716.72
Stationery and printing (general offices)		6,491.98
Miscellaneous expenses		2,705.30
Total		\$191,734.46
Maintenance of way and structures:		
Repairs of roadway		\$586,271.37
Renewals of rails		58,737.95
Renewals of ties		82,712.00
Repairs and renewals of bridges and culverts		70,132.27

Repairs and renewals of fences, road crossings, signs, and cattle guards	\$23,746.39
Repairs of buildings and fixtures	252,795.03
Repairs and renewals of docks and wharves	16,110.52
Repairs and renewals of telegraph	7.10
Stationery and printing	900.67
Total	<u>\$1,091,414.20</u>
Maintenance of equipment:	
Superintendence	\$25,590.34
Repairs and renewals of locomotives	332,342.42
Repairs and renewals of passenger cars	103,330.52
Repairs and renewals of freight cars	702,894.84
Repairs and renewals of work cars	13,903.40
Repairs and renewals of marine equipment	88,756.20
Repairs and renewals of shop machinery and tools	48,838.89
Stationery and printing	2,016.14
Miscellaneous expenses	1,049.42
Total	<u>\$1,318,722.17</u>
Conducting transportation:	
Superintendence	\$46,579.13
Engine and roundhouse men	376,064.26
Fuel for locomotives	825,385.83
Water supply for locomotives	24,822.54
Oil, tallow, and waste for locomotives	10,195.31
Other supplies for locomotives	5,344.42
Train service	270,980.69
Train supplies and expenses	61,158.89
Switchmen, flagmen, and watchmen	177,827.81
Telegraph expenses	66,048.39
Station service	280,049.51
Station supplies	48,723.99
Car mileage—balance	98,807.09
Loss and damage	27,874.84
Injuries to persons	45,065.70
Clearing wrecks	7,081.56
Operating marine equipment	57,779.60
Advertising	16,560.12
Outside agencies	1,875.58
Commissions	5,423.09
Rentals for tracks, yards, and terminals	7,500.00
Rentals of buildings and other property	9,114.04
Stationery and printing	29,410.13
Total	<u>\$2,499,672.52</u>

Recapitulation:

General expenses	\$191,734.46
Maintenance of way and structures	1,091,414.20
Maintenance of equipment	1,318,722.17
Conducting transportation	2,499,672.52
Total operating expenses	<u>\$5,101,543.35</u>

Percentage of operating expenses to gross earnings

73.796

GENERAL BALANCE SHEET.

Cost of road	\$14,562,748.85
Cost of equipment	2,617,687.93

Stock of:

Boston & Maine Railroad	\$4,700.00
Portland Union Ry. Station Co.	25,000.00
Portland & Ogdensburg Railway	79,272.00
Bridgton & Saco River Railroad	5,000.00
St. John Bridge & Railway Extension Company	20,000.00
	<u>133,972.00</u>

Bonds of:

Maine Central Railroad Company	\$500.00
Knox & Lincoln Railway	31,000.00
Maine Shore Line Railroad Co.	5,000.00
Washington County Railway Co.	250,000.00
Upper Coös Railroad	118,000.00
	<u>404,500.00</u>

Total permanent investments \$17,718,908.78

Cash	\$593,001.70
Bills receivable	1,201,817.50
Due from agents	166,056.50
Traffic balances due from other companies (net)	192,913.08
Due from solvent companies and individuals	165,753.09
Sinking and other special funds	803,127.88

Total cash and current assets 3,122,669.75

Materials and supplies 757,331.65

Total \$21,598,910.18

Capital stock, common \$1,988,000.00

Funded debt 12,492,192.00

Current liabilities:		
Audited vouchers and accounts	\$492,390.53	
Salaries and wages	106,117.24	
Dividends not called for	9,508.29	
Matured interest coupons unpaid (including coupons due July 1)	37,611.75	
Rentals due and unpaid (including rentals due July 1)	29,975.00	
Dividend No. 69, due July 1, 1904	87,087.00	
Total current liabilities		\$762,689.81
Accrued liabilities:		
Interest accrued and not yet due	\$165,621.66	
Taxes accrued and not yet due	139,698.28	
Rentals accrued and not yet due	84,393.91	
Total accrued liabilities		389,715.85
Sundry lease accounts		104,933.75
Washington County Railway Co. bond guaranty		250,000.00
Sinking and other special funds*	\$803,127.88	
Equipment fund	688,000.00	
Improvement fund	283,208.73	
Injury fund	100,000.00	
Contingent fund	253,963.74	
Sundry accounts	199,963.85	
Total sinking and other special funds		2,328,264.20
Profit and loss balance—surplus		283,114.57
Total		\$21,598,910.18
CAPITAL STOCK.		
Capital stock authorized by law, common		\$12,000,000.00
Capital stock authorized by votes of company, common		4,988,000.00
Capital stock issued and outstanding, common		4,975,800.00
Portland & Kennebec scrip†		600.00
Maine Central scrip†		600.00
Androscoggin & Kennebec stock bonds†		11,000.00
Total capital stock liability		\$4,988,000.00
Number of shares issued and outstanding, com- mon		49,758
Number of stockholders, common		784
Number of stockholders in New Hampshire, com- mon		62
Amount of stock held in New Hampshire, com- mon		\$177,500.00

* For detail see Forty-Third Annual Report of the Maine Central Railroad Company

† Exchangeable for Maine Central stock on presentation.

FUNDED DEBT.

DESCRIPTION OF BONDS, ETC.	Rate of interest.	Date of maturity.	Amount outstanding.	Interest paid during the year.
Maine Central Consolidated....	7%	Apr. 1, 1912	\$3,924,000.00	\$273,637.00
" " "	5%	" "	269,500.00	13,555.00
" " "	4½%	" "	1,525,000.00	68,838.75
" " "	4%	" "	3,265,500.00	130,570.00
" " Collateral Trust..	5%	June 1, 1923	669,000.00	33,175.00
Maine Shore Line Railroad.....	6%	" "	81,000.00	4,560.00
Penobscot Shore Line, 1st mtg.	4%	Aug. 1, 1920	1,300,000.00	52,060.00
Knox & Lincoln, 2d mortgage.	5%	Feb. 1, 1921	400,000.00	18,425.00
Maine Central, sinking fund....	4½%	Feb. 1, 1905	600,000.00	25,852.50
" " Imp., Class A....	4½%	July 1, 1916	200,000.00	20,115.00
" " " " B....	4½%	July 1, 1917	250,000.00	
" " interest scrip*.....			8,192.00	
Total			\$12,492,192.00	\$640,788.25

SINKING FUNDS.†

Amount June 30, 1903	\$743,034.97
Additions during the year	60,341.41
Total, including additions	\$803,376.38
Deductions during the year	248.50
Total sinking funds June 30, 1904	\$803,127.88

EQUIPMENT FUND.

Amount of equipment fund June 30, 1903	\$493,796.00
Additions during the year	688,000.00
Total, including additions	\$1,181,796.00
Deductions during the year	493,796.00
Total equipment fund June 30, 1904	\$688,000.00

* Exchangeable for Maine Central consols on presentation.

† For full details of various sinking funds see tables 11 to 14 inclusive, Forty-third Annual report of the Maine Central Railroad Company.

INJURY FUND.	
Amount of injury June 30, 1903	\$68,332.33
Additions during the year	31,667.67
Total injury fund June 30, 1904	\$100,000.00
IMPROVEMENT FUND.	
Amount of improvement fund June 30, 1903	\$371,305.31
Additions during the year	173,250.00
Total, including additions	\$544,555.31
Sundry improvements	261,346.58
Total improvement fund June 30, 1904	\$283,208.73
VOLUME OF TRAFFIC, ETC.	
Passenger traffic:	
Number of passengers carried paying revenue	3,240,181
Number of passengers carried one mile	115,966,451
Number of passengers carried one mile per mile of road operated	142,128
Average length of journey per passenger, miles	35.79
Average amount received from each passenger	\$0.72849
Average amount received per passenger per mile carried . . . . .	.02035
Passenger earnings (gross) per mile of road operated	\$3,348.49
Passenger earnings (gross) per passenger-train mile run	1.31572
Freight traffic:	
Number tons of freight hauled earning revenue	4,454,794
Number of tons of freight hauled one mile	368,389,837
Number of tons of freight hauled one mile per mile of road operated	451,496
Average length of haul per ton, miles	82.69
Average amount received for each ton freight	\$0.90236
Average amount received per ton per mile hauled . . . . .	.01091
Freight earnings (gross) per mile of road operated	\$4,979.16
Freight earnings (gross) per freight-train mile run	278.638
Operating expenses:	
Operating expenses per mile of road operated	6,252.40
Operating expenses per revenue-train mile run	1.49746

Train mileage:	
Miles run by passenger trains	1,948,749
Miles run by freight trains	1,330,261
Miles run by mixed trains	127,775
Total mileage of trains earning revenue	3,406,785
Miles run by locomotives helping trains	82,499
Miles run by construction and other trains	180,409
Total train mileage	3,669,693
Fares and freights:	
Average rate per fare per mile, all tickets . . . . .	.02035
Average rate per ton per mile, all freight . . . . .	.01091
Average number of persons employed	4,252

RAILROAD OWNED.

Length of main line	394.46 miles
Length of branch line	1.15 "
Total length of line owned	395.61 miles
Length of second track	37.84 "
Length of side track, etc.	159.74 "
Total length of track owned	593.19 "

RAILROAD OPERATED.

Length of main line in New Hampshire	100.13 miles
Total length of main line	808.74 "
Total length of branch line	7.19 "
Total length of line operated in New Hampshire	100.13 "
Total length of line operated	815.93 "
Total length of second track	45.10 "
Total length of side track, etc., in New Hampshire	26.39 "
Total length of side track, etc.	278.26 "
Total length of track operated in New Hampshire	126.52 "
Total length of track operated	1,139.29 "

DESCRIPTION OF RAILROADS AND BRANCHES OWNED BY OTHER COMPANIES BUT OPERATED BY
THIS COMPANY.

NAME OF RAILROAD OR BRANCH.	Main or Branch Line.	Termini of Main or Branch Line.	Length of line in miles.		Second track.		Side track, etc.		Length com- puted as single track.	
			Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.
Belfast & Moosehead Lake.	Main.	Barnham June, to Belfast, Me.	33.13	.....	.....	.....	3.79	.....	36.92	.....
Dexter & Newport.	"	Newport to Dexter.	14.23	.....	.....	.....	1.05	.....	15.28	.....
Dexter & Piscataquis.	"	Dexter Junction to Foxcroft, "	16.54	.....	.....	.....	4.11	.....	20.65	.....
European & No. American	"	Ranger to Vanceboro, "	114.30	.....	3.80	.....	47.91	.....	166.01	.....
Stillwater Branch.	Branch	Oroon to Stillwater, "	3.01	.....	.....	.....	1.02	.....	4.03	.....
Enfield Branch.	"	Enfield to Montague, "	3.03	.....	.....	.....	1.27	.....	4.30	.....
Eastern Maine.	Main.	Bangor June, to Bucksport, "	18.80	.....	.....	.....	3.56	.....	21.96	.....
Portland & Ogdensburg.	"	Portland to Lunenburg, Vt.,	109.10	57.98	3.46	.....	36.36	17.95	148.92	75.93
Upper Coos.	"	Quebec Junction to Canada Line, near Beecher Falls, Vt.,	55.33	41.48	.....	.....	11.43	8.33	66.76	49.81
Hereford.	"	Canada Line, near Beecher Falls, Vt., to Lime Ridge, P. Q.	52.85	.67	.....	.....	8.42	.11	61.27	.78
Total.			420.32	109.13	7.26	.....	118.52	26.39	546.10	126.52

DESCRIPTION OF EQUIPMENT.

ROLLING STOCK.	DESCRIPTION OF EQUIPMENT.							Name of coupler used.
	Number owned.	Number owned by leased roads.	Total owned and leased.	Maximum weight, pounds.	Average weight, pounds.	Number equipped with power driv- ing-wheel brakes.	Number equipped with power train brakes.	Number equipped with automatic couplers.
Passenger locomotives.....	124	46	62	.....	.....	62	.....	.....
Freight ".....			77	.....	.....	77	.....	.....
Switching, etc., ".....			31	.....	.....	31	.....	.....
Total.....	124	46	170	.....	.....	170	.....	.....
Passenger cars.....	122	57	159	.....	.....	.....	159	{ 27 Janney-Buhoup, 120 Gould, 12 National. 3 Janney-Buhoup, 9 Gould, 8 National.
Combination cars.....			20	.....	.....	.....	20	
Parlor cars.....			.....	.....	.....	.....	.....
Baggage, express, and mail cars..	51	19	70	.....	.....	.....	70	{ 9 Janney-Buhoup, 12 Na- tional, 49 Gould. Gould.
Other cars in passenger service....	.....	2	2	.....	.....	.....	2	
Total.....	173	78	251	.....	.....	.....	251	
Box cars.....	1,748	579	2,327	.....	.....	.....	2,126	{ 323 Trojan, 1 Washburn, 6 standard, 400 Monarch, 1,597 Gould.

Flat cars	1,200	731	1,931	.....	.....	1,773	1,931	{ 968 Gould, 94 New National, 9 Tower, 840 Trojan, 25 Standard.
Stock cars	23	32	55	.....	.....	55	55	41 Trojan, 14 Gould.
Coal cars	337	.....	537	.....	.....	537	537	{ 480 Gould, 50 Norton, 7 Tro jan
Refrigerator cars	19	5	24	.....	.....	24	24	Gould.
Total	3,527	1,347	4,874	.....	.....	4,515	4,874	
Officers' and pay cars	1	.....	1	.....	.....	1	1	National.
Gravel cars	38	20	58	.....	.....	.....	.....	.....
Derrick cars	17	2	19	.....	.....	13	18	8 Trojan, 10 Gould.
Caboose cars	53	16	69	.....	.....	69	69	14 Trojan, 55 Gould.
Other cars in company's service	295	25	320	.....	.....	263	277	{ 1 Standard, 261 Trojan, 75 Gould.
Total	404	63	467	.....	.....	286	365	

Number of 8-wheel cars in passenger service with brakes for all wheels, 251.

Number of 12-wheel cars in passenger service with brakes for all wheels (officers' and pay cars), 1.

RAILROAD CROSSINGS IN NEW HAMPSHIRE.

Crossings with Highways.

Number of crossings of company's railroad with highways at grade	63
Number of highway grade crossings protected by flagmen (summer, 6; winter, 3)	9
Number of highway grade crossings unprotected	57
Number of highway bridges 18 feet (or more) above track	1
Height of lowest highway bridge above track	20 ft. 8 in.

Crossings with Other Railroads.

Crossings of company's railroad with other railroads at grade	6
The Boston & Maine Railroad at Fabyans.	
Whitefield, Scotts, Jefferson Junction, and Coös Junction	
The Grand Trunk Railway at North Stratford.	

NEW BRIDGES BUILT DURING THE YEAR.

NUMBER AND LOCATION.	Description of bridge replaced.	Description of new bridge.	Length of spans and number of tracks.	By whom built.
One over Hall's stream on line between New Hampshire and Canada. South half in New Hampshire and north half in Canada.	Through Howe truss, pony.	Through plate girder.	Single track; one span; length over all, 69 feet.	Penn.Steel Co. Steelton, Pa.

Total length of pile and trestle bridging, 1,003 feet.

ACCIDENTS TO PERSONS.

KILLED AND INJURED.	From causes beyond their own control in New Hampshire.		From their own misconduct or carelessness in New Hampshire.		Total in New Hampshire.		Total on all lines operated.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.				1		1		22
Employees.		2				2	8	124
Others				1		1	11	22
Total		2		2		4	19	168

STATEMENT OF EACH ACCIDENT IN NEW HAMPSHIRE.

Passenger opened cellar door in station waiting room and fell downstairs.

Party slightly injured in getting off moving train.

Employee on work train had his arm struck by a lever while operating a flange scraper.

Brakeman slipped on the ice in getting onto the ground from a standing train and sprained foot.

PROPER ADDRESS OF THE COMPANY.

MAINE CENTRAL RAILROAD COMPANY,

PORTLAND, ME.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Lucius Tuttle, Portland, Me.; vice-president, George F. Evans, Portland, Me.; treasurer, George W. York, Portland, Me.; clerk of corporation, Henry B. Cleaves, Portland, Me.; comptroller and general auditor, George S. Hobbs, Portland, Me.; general manager, George F. Evans, Portland, Me.; general passenger and ticket agent, Frederic E. Boothby, Portland, Me.; general freight agent, William K. Sanderson, Portland, Me.; general superintendent, Morris McDonald, Portland, Me.; superintendent Mountain division, George F. Black, Portland, Me.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

George F. Evans, Portland, Me.; William P. Frye, Lewiston, Me.; Samuel C. Lawrence, Medford, Mass.; Lewis Cass Ledyard, New York, N. Y.; Joseph H. Manley, Augusta, Me.; Henry R. Reed, Boston, Mass.; Joseph W. Symonds, Portland, Me.; Lucius Tuttle, Boston, Mass.; John Ware, Waterville, Me.; George P. Wescott, Portland, Me.; Henry M. Whitney, Brookline, Mass.; Franklin A. Wilson, Bangor, Me.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

LUCIUS TUTTLE,
SAMUEL C. LAWRENCE,
JOSEPH W. SYMONDS,
WILLIAM P. FRYE,
GEORGE P. WESCOTT,
J. H. MANLEY,
GEORGE F. EVANS,
FRANKLIN A. WILSON,
HENRY R. REED,
LEWIS CASS LEDYARD,

Directors.

GEORGE S. HOBBS,

Comptroller.

GEORGE F. EVANS.

Vice-President.

STATE OF MAINE.

CUMBERLAND, SS. September 9, 1904. Then personally appeared the above-named Lucius Tuttle, Samuel C. Lawrence, Joseph W. Symonds, William P. Frye, George P. Wescott, J. H. Manley, George F. Evans, Franklin A. Wilson, Henry R. Reed, Lewis Cass Ledyard, and George S. Hobbs and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

HENRY B. CLARK,

Justice of the Peace.

REPORT

OF THE

MANCHESTER & LAWRENCE RAIL- ROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.

Rental received from lease of road	\$112,960.00
Dividends received on stocks owned:	
Mt. Washington Railroad (sold Jan. 19, 1904)	212.00
Interest on deposits	23.59
 Gross income	 \$113,197.59
Expenses and charges upon income accrued during the year:	
Salaries and maintenance of organization	\$1,789.76
Interest on funded debt	10,960.00
Premium on Concord & Montreal Railroad stock at 180¼	2,407.50
 Total expenses and charges upon income	 15,157.26
Net divisible income	\$98,040.33
Dividends declared, 10 per cent on common stock	100,000.00
 Deficit for the year ending June 30, 1904	 \$1,959.67
Amount of surplus June 30, 1903	136,407.04
 Total surplus June 30, 1904	 \$134,447.37

GENERAL BALANCE SHEET.

Cost of road	\$1,000,000.00
Cost of telegraph	4,770.35
Lands in Manchester, N. H., terminals	274,298.53
Stock of Concord & Montreal Railroad	3,000.00
 Total permanent investments	 \$1,282,068.88

Cash	\$8,797.99	
Due from solvent companies and individuals	123,454.00	
Total cash and current assets		\$132,251.99
Total		\$1,414,320.87
Capital stock		\$1,000,000.00
Funded debt		274,000.00
Dividends not called for		5,873.50
Profit and loss balance—surplus		134,447.37
Total		\$1,414,320.87

CAPITAL STOCK.

Capital stock authorized by law, common	\$1,000,000.00
Capital stock authorized by votes of company, common	1,000,000.00
Capital stock issued and outstanding, common	1,000,000.00
Number of shares issued and outstanding, common	10,000
Number of stockholders, common	567
Number of stockholders in New Hampshire, common	282
Amount stock held in New Hampshire, common	\$560,000.00

FUNDED DEBT.

DESCRIPTION OF BONDS, ETC.	Rate of interest.	Date of maturity.	Amount outstanding.	Interest paid during the year.
Series "A" *	4%	Jan. 1, 1922	\$274,000.00	\$10,960.00

RAILROAD OWNED.

Length of main line in New Hampshire	22.39 miles
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* Issued for the purchase of real estate in Manchester, N. H., but not secured by mortgage. The interest is guaranteed and paid by the Boston & Maine Railroad.

PROPER ADDRESS OF THE COMPANY.

MANCHESTER & LAWRENCE RAILROAD,
867 ELM ST., MANCHESTER, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Calvin Page, Portsmouth, N. H.; treasurer and clerk of corporation, George Henry Chandler, Manchester, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Calvin Page, Portsmouth, N. H.; George Byron Chandler, Manchester, N. H.; William P. Fowler, Boston, Mass.; Sumner Wallace, Rochester, N. H.; Eugene P. Carver, Brookline, Mass.; Frank E. Greene, Moultonborough, N. H.; George E. Smith, Everett, Mass.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

CALVIN PAGE,

President.

GEORGE HENRY CHANDLER,

Treasurer.

STATE OF NEW HAMPSHIRE.

HILLSBOROUGH, ss. September 1, 1904. Then personally appeared the above-named Calvin Page, president, and George Henry Chandler, treasurer, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

WILLIS B. KENDALL,

Justice of the Peace.

REPORT

OF THE

MT. WASHINGTON RAILWAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.		
Gross earnings from operation		\$24,064.00
Less operating expenses		14,993.75
Income from operation		\$9,070.25
Miscellaneous income:		
Rent of Summit House	\$6,005.00	
Less expenses	321.84	
		5,683.16
Total income		\$14,753.41
Deductions from income, taxes		2,185.91
Net income		\$12,567.50
Dividends declared, 4 per cent on common stock, December 1, 1903		8,460.00
Surplus for year ending June 30, 1904		\$4,107.50
Surplus for year ending June 30, 1903		5,907.85
Total profit and loss account, surplus		\$10,015.35
Deduct, appropriated for:		
New passenger car	\$1,500.00	
Locomotives	1,000.00	
Safety arrangements	500.00	
New trestles	2,000.00	
Buildings and water works	2,950.00	
		7,950.00
Balance profit and loss account June 30, 1904, surplus		\$2,065.35

EARNINGS FROM OPERATION.	
Passenger revenue	\$23,914.00
Mail	150.00
Total passenger earnings	\$24,064.00
EXPENSES OF OPERATION.	
Maintenance of way and structures:	
Repairs of roadway	\$3,803.35
Repairs of buildings	148.91
Total	\$3,952.26
Maintenance of equipment:	
Repairs and renewals of locomotives	\$1,282.21
Repairs and renewals of passenger cars	45.83
Shop, machinery, tools, etc.	605.30
Total	\$1,933.34
Conducting transportation:	
Wages of enginemen, firemen, and trainmen	\$2,613.75
Fuel for locomotives	2,640.05
Water supplies for locomotives	404.89
All other supplies for locomotives	22.32
All other train supplies	2.74
Wages of switchmen, flagmen, and watchmen	397.10
Expense of telegraph, including train dispatchers and operators . . . . .	.50
Station supplies	65.71
Injuries to persons	161.75
Total	\$6,338.81
General expenses:	
Salaries of officers	\$1,281.78
Advertising	35.00
Insurance	1,340.56
Stationery and printing	72.00
Other general expenses	40.00
Total	\$2,769.34

Recapitulation:	
Maintenance of way and structures	\$3,952.26
Maintenance of equipment	1,933.34
Conducting transportation	6,338.81
General expenses	2,769.34
Grand total	\$14,993.75

GENERAL BALANCE SHEET.	
Cost of road and equipment	\$130,000.00
Summit House	26,000.00
Lands at summit and base of Mt. Washington .	56,000.00
Total permanent investments	\$212,000.00
Cash	9,515.35
Total	\$221,515.35
Capital stock, common	\$211,500.00
Appropriated for renewals	7,950.00
Profit and loss balance	2,065.35
Total	\$221,515.35

CAPITAL STOCK.	
Capital stock authorized by charter	\$211,500.00
Capital stock authorized by votes of company .	211,500.00
Total amount paid as per books of the company	211,500.00
Total number of stockholders	2
Number of stockholders in New Hampshire .	2
Amount of stock held in New Hampshire . .	\$211,500.00

VOLUME OF TRAFFIC, ETC.	
Passenger traffic:	
Number of passengers carried earning revenue	7,712
Number of passengers carried one mile . .	51,361
Average of distance carried, miles	6.666
Total passenger revenue	\$23,914.00
Average amount received from each passenger	3.10
Average receipts per passenger per mile . .	.465
Passenger earnings per mile of road	7,174.92
Average number of persons employed	30
Average rate of fare per mile received for local tickets	\$0.465

RAILROAD OWNED.

Main line of road from Base station to summit of Mt. Washington	3.333 miles
Total road belonging to this company	3.333 "
Total length of track owned, computed as single track	3.333 "

RAILROAD OPERATED.

Total miles of road operated by this company .	3.333 miles
Total miles of road operated by this company in New Hampshire	3.333 "
Number of stations in New Hampshire on all roads operated by this company	2
Number telegraph offices in same, summer only	1
Number of stations on all roads owned by this company	2
Same in New Hampshire	2

EQUIPMENT.

	Number owned.	Total number.	Maximum weight.	Average weight.	Number equipped with train brake.
Passenger locomotives	7	7	12 tons.	12 tons.	7
Total	7	7			7
Passenger cars	6	6	3 tons.	2 $\frac{3}{4}$ tons.	
Baggage, mail, and express cars	1	1	$\frac{1}{4}$ ton.		
Total	7	7			
Flat freight cars (basis of 8 wheels)	2	2	1 $\frac{1}{2}$ tons.		
Total	2	2			

PROPER ADDRESS OF THE COMPANY.

MOUNT WASHINGTON RAILWAY COMPANY,

CONCORD, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, George E. Cummings, Woodsville, N. H.; vice-president, Benjamin A. Kimball, Concord, N. H.; superintendent, John Horne, Lakeport, N. H.; general passenger agent, Frank E. Brown, Concord, N. H.; treasurer, John F. Webster, Concord, N. H.; clerk of corporation, Frank E. Brown, Concord, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

George E. Cummings, Woodsville, N. H.; Benjamin A. Kimball, John M. Mitchell, Nathaniel White, Jr.,* Frank E. Brown, Alvin B. Cross, Concord, N. H.; George A. Fernald, Boston, Mass.

GEORGE E. CUMMINGS,

President.

JOHN F. WEBSTER,

Treasurer.

STATE OF NEW HAMPSHIRE.

MERRIMACK, ss. Concord, October, 1904. Then personally appeared Benjamin A. Kimball, vice-president, and John F. Webster, treasurer of said railway, and severally made oath to the truth of the foregoing statement by them subscribed, according to their best knowledge and belief.

GEORGE E. SHEPARD,

Notary Public.

* Died October 4, 1904.

REPORT

OF THE

NASHUA & LOWELL RAILROAD CORPORATION

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Rental received from lease of road	\$73,000.00
Dividends received on stocks owned (Boston & Maine Railroad)	1,572.00
Office rent, \$60; interest, \$687.10	747.10
Gross income	\$75,319.10
Salaries and maintenance of organization	941.90
Net divisible income	\$74,377.20
Dividends declared, 9 per cent on common stock	72,000.00
Surplus for the year ending June 30, 1904	\$2,377.20
Amount of surplus June 30, 1903	163,849.39
Total surplus June 30, 1904	\$166,226.59
GENERAL BALANCE SHEET.	
Cost of road	\$684,242.07
Cost of equipment	218,242.95
Total permanent investments	\$902,485.02
Cash	\$4,645.82
Bills receivable and stock	60,306.25
Total cash and current assets	64,952.07
Total	\$967,437.09

Capital stock, common	\$800,000.00
Current liabilities:	
Dividends not called for	1,198.50
Matured interest coupons unpaid	12.00
Profit and loss balance—surplus	166,226.59
Total	\$967,437.09

CAPITAL STOCK.	
Capital stock authorized by law, common	\$800,000.00
Capital stock authorized by votes of company, common	800,000.00
Number of shares issued and outstanding, common	8,000
Number of stockholders, common	412
Number of stockholders in New Hampshire, common	149
Amount stock held in New Hampshire, common	\$1,900.00

RAILROAD OWNED.	
Total length of line owned in New Hampshire	5.25 miles
Total length of line owned	14.50 "

PROPER ADDRESS OF THE COMPANY.

NASHUA & LOWELL RAILROAD CORPORATION.

50 STATE ST., BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, David P. Kimball, 40 Water St., Boston, Mass.; treasurer, John Brooks, 50 State St., Boston, Mass.; clerk of corporation, Walter A. Lovering, Nashua, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

David P. Kimball, Boston, Mass.; Alfred S. Hall, Winchester, Mass.; Edward A. Newell, Wilton, N. H.; Frederick Brooks, Boston, Mass.; John Brooks, Cambridge, Mass.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

FRED BROOKS.
ALFRED S. HALL.
JOHN BROOKS,

Directors.

JOHN BROOKS,

Treasurer.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. September 29, 1904. Then personally appeared the above-named Fred Brooks, Alfred S. Hall, and John Brooks, a majority of the directors, and John Brooks, the treasurer of the Nashua & Lowell Railroad Corporation, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

S. K. HAMILTON
Justice of the Peace.

REPORT

OF THE

NORTHERN RAILROAD COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Rental received for lease of road	\$189,104.00
Interest received on bonds owned	823.75
Interest on deposit	207.44
Gross income	\$190,135.19
Salaries and maintenance of organization	4,016.65
Net divisible income	\$186,118.54
Dividends declared, 6 per cent on common stock	184,104.00
Surplus for the year ending June 30, 1904	\$2,014.54
Amount of surplus June 30, 1903	22,314.73
Total surplus June 30, 1904	\$24,329.27
GENERAL BALANCE SHEET.	
Cost of road	\$3,068,400.00
8,000 bonds of Concord & Claremont Railroad, 4½ per cent	9,302.50
Total permanent investments	\$3,077,702.50
Cash	17,649.03
Total	\$3,095,351.53
Capital stock	\$3,068,400.00
Dividends not called for	2,622.26
Profit and loss balance—surplus	24,329.27
Total	\$3,095,351.53

CAPITAL STOCK.

Capital stock authorized by law, common . . .	\$3,068,400.00
Capital stock authorized by votes of company, common . . .	3,068,400.00
Capital stock issued and outstanding, common . . .	3,068,400.00
Number of shares issued and outstanding, common . . .	30,684
Number of stockholders, common . . .	2,070
Number of stockholders in New Hampshire, common . . .	1,164
Amount stock held in New Hampshire, common . . .	\$15,180.00

RAILROAD OWNED.

Length of main line	69.50 miles
Length of branch line	13.41 "
Total length of line owned	82.91 "

PROPER ADDRESS OF THE COMPANY.

NORTHERN RAILROAD.

1023 OLD SOUTH BUILDING, BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Alvah W. Sulloway, Franklin, N. H.; treasurer, George U. Crocker, 1023 Old South Building, Boston, Mass.; clerk of corporation, Henry W. Stevens, Concord, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Alvah W. Sulloway, Franklin, N. H.; Josiah H. Benton, Jr., Boston, Mass.; William F. Thayer, Concord, N. H.; Seth M. Richards, Newport, N. H.; Silas Pierce, Edgar Crocker, Boston, Mass.; Charles P. Chase, Hanover, N. H.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

ALVAH W. SULLOWAY,
President and Director.

GEORGE U. CROCKER,
Treasurer.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. October 20, 1904. Then personally appeared the above-named Alvah W. Sulloway, president, and George U. Crocker, treasurer, and severally made oath that the foregoing certificate by the subscribed is, to the best of their knowledge and belief, true.

Before me,

G. GLOVER CROCKER, JR.,
Justice of the Peace.

REPORT

OF THE

PEMIGEWASSET VALLEY RAILROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.

Rental received from lease of road . . .	\$32,790.00
Salaries and maintenance of organization . . .	270.13
Net divisible income	\$32,519.87
Dividends declared, 6 per cent on common stock	32,490.00
Surplus for the year ending June 30, 1904 . . .	\$29.87
Amount of surplus June 30, 1903	444.87
Total surplus June 30, 1904	\$474.74

GENERAL BALANCE SHEET.

Cost of road	\$541,262.12
Cash	712.62
Total	\$541,974.74
Capital stock, common	\$541,500.00
Profit and loss balance—surplus	474.74
Total	\$541,974.74

CAPITAL STOCK.

Capital stock authorized by law, common . . .	\$2,000,000.00
Capital stock authorized by votes of company, common	541,500.00
Capital stock issued and outstanding, common .	541,500.00
Number shares issued and outstanding, common .	5,415
Number of stockholders, common	194
Number of stockholders in New Hampshire, common	144
Amount stock held in New Hampshire, common	\$401,200.00

RAILROAD OWNED.

Length of main line	22.93 miles
Length of side track, etc.	6.35 "
Total length of track owned	29.28 "

PROPER ADDRESS OF THE COMPANY.

PEMIGEWASSET VALLEY RAILROAD,

CONCORD, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Benjamin A. Kimball, Concord, N. H.; treasurer, John F. Webster, Concord, N. H.; clerk of corporation, George H. Adams, Plymouth, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Benjamin A. Kimball, Concord, N. H.; Joseph W. Campbell, Woodstock, N. H.; John J. Cilley, Deerfield, N. H.; Charles H. Bowles, Plymouth, N. H.; Nathan P. Hunt, Harry E. Parker, Manchester, N. H.; John F. Webster, Concord, N. H.; George E. Cummings, Woodsville, N. H.; George W. Hills, Lawrence, Mass.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

BENJAMIN A. KIMBALL,
JOHN F. WEBSTER,

Directors.

JOHN F. WEBSTER,

Treasurer.

STATE OF NEW HAMPSHIRE.

MERRIMACK, ss. Concord, October 20, 1904. Then personally appeared the above-named Benjamin A. Kimball, president, and John F. Webster, treasurer of said Pemigewasset Valley Railroad Company, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

GEORGE E. CUMMINGS,

Justice of the Peace.

REPORT

OF THE

PETERBOROUGH & HILLSBOROUGH RAILROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL BALANCE SHEET.

Cost of road	\$209,298.44
Sinking and other special funds	925.00
Profit and loss balance—deficit	120,583.83
	\$330,807.27
Capital stock, common	\$45,000.00
Funded debt	165,000.00
Matured interest coupons unpaid (including coupons due July 1)	112,181.25
Gratuity	8,626.02
Total	\$330,807.27

CAPITAL STOCK.

Capital stock authorized by law, common	\$45,000.00
Capital stock authorized by votes of company, common	45,000.00
Capital stock issued and outstanding, common	45,000.00
Number of shares issued and outstanding, common	450
Number of stockholders, common	1
Number of stockholders in New Hampshire, common	1
Amount stock held in New Hampshire, common	\$45,000.00

PROPER ADDRESS OF THE COMPANY.

PETERBOROUGH & HILLSBOROUGH RAILROAD,

1023 OLD SOUTH BUILDING, BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Alvah W. Sulloway, Franklin, N. H.; treasurer, George U. Crocker, 1023 Old South Building, Boston, Mass.; clerk of corporation, Barron Shirley, Franklin, N. H.; assistant treasurer, Horace E. Chamberlin, Concord, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Alvah W. Sulloway, Frederick H. Daniell, Franklin, N. H.; Enoch Gerrish, Concord, N. H.; William Power Wilson, Boston, Mass.; Horace E. Chamberlin, Concord, N. H.; George E. Whitney, Enfield, N. H.; Frederick L. Thompson, Bellows Falls, Vt.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

ALVAH W. SULLOWAY,
President and Director.

GEORGE U. CROCKER,
Treasurer.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. October 20, 1904. Then personally appeared the above-named Alvah W. Sulloway, president, and George U. Crocker, treasurer, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

G. GLOVER CROCKER, JR.,
Justice of the Peace.

REPORT

OF THE

PETERBOROUGH RAILROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Rental received from lease of road	\$15,700.00
Interest on deposits	79.34
Gross income	\$15,779.34
Salaries and maintenance of organization	177.72
Net divisible income	\$15,601.62
Dividends declared, 4 per cent on common stock	15,400.00
Surplus for the year ending June 30, 1904	\$201.62
Amount of surplus June 30, 1903	214,333.92
Total surplus June 30, 1904	\$214,535.54
GENERAL BALANCE SHEET.	
Cost of road	\$595,194.00
Cash	4,341.54
Total	\$599,535.54
Capital stock, common	\$385,000.00
Profit and loss balance—surplus	214,535.54
Total	\$599,535.54

CAPITAL STOCK.	
Capital stock authorized by law, common . . .	\$600,000.00
Capital stock authorized by votes of company, common . . .	600,000.00
Capital stock issued and outstanding, common . . .	385,000.00
Number of shares issued and outstanding, common . . .	3,850
Number of stockholders, common . . .	325
Number of stockholders in New Hampshire, common . . .	285
Amount stock held in New Hampshire, common . . .	\$284,700.00
RAILROAD OWNED.	
Total length of line owned	10.50 miles

PROPER ADDRESS OF THE COMPANY.

PETERBOROUGH RAILROAD.

NASHUA, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Charles H. Burns, Nashua, N. H.; treasurer, Gilman C. Shattuck, Nashua, N. H.; clerk of corporation, Harry W. Ramsdell, Nashua, N. H.; general auditor, William E. Spalding, Nashua, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Charles H. Burns, Wilton, N. H.; Thomas B. Eaton, Worcester, Mass.; Henry A. Cutter, Ben Emery Burns, George F. Andrews, Arthur G. Shattuck, Nashua, N. H.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

CHARLES H. BURNS,
President.

GILMAN C. SHATTUCK,
Treasurer.

STATE OF NEW HAMPSHIRE.

HILLSBOROUGH, ss. September 14, 1904. Then personally appeared the above-named Charles H. Burns and G. C. Shattuck and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

HARRY P. GREELEY.

Justice of the Peace.

REPORT

OF THE

SULLIVAN COUNTY RAILROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Gross earnings from operation	\$358,162.01
Operating expenses	290,727.74
Net earnings from operation	\$67,434.27
Miscellaneous income, less expense of collecting:	
Rent of tenements, lands, etc.	\$850.99
Less expense	227.68
Income from sources other than operation	623.31
Gross income above operating expenses	\$68,057.58
Charges upon income accrued during the year:	
Interest on funded debt	\$14,280.00
Taxes	13,723.42
Total charges and deductions from income	28,003.42
Net divisible income	\$40,054.16
Dividends declared during the year payable on—	
October 1, 1903, 4 per cent on	
\$500,000, common	\$20,000.00
April 1, 1904, 4 per cent on \$500,-	
000, common	20,000.00
Total dividends declared	40,000.00
Surplus for the year ending June 30, 1904	54.16
Amount of surplus June 30, 1903	131,432.62
Total surplus June 30, 1904	\$131,486.78

EARNINGS FROM OPERATION.	
Gross receipts from passengers	\$109,800.06
Excess fares refunded	290.91
Net revenue from passengers	\$109,509.15
From mails	\$7,452.42
From express	3,640.00
From extra baggage and storage	1,607.27
	12,699.69
Total earnings, passenger service	\$122,208.84
Gross receipts from freight	\$233,201.51
Overcharge to shippers	644.64
Net revenue from freight	\$232,556.87
Storage and miscellaneous	189.12
Total earnings, freight service	\$232,745.99
Total passenger and freight earnings	\$354,954.83
Other earnings from operation:	
Switching charges—balance	\$3,006.73
Telegraph companies	90.44
Rental from tracks, yards, and terminals	110.01
Total other earnings	3,207.18
Gross earnings from operation	\$358,162.01
EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers	\$900.00
Salaries of clerks and attendants	1,560.00
General office expenses and supplies	35.82
Insurance	873.96
Law expenses	4,414.27
Miscellaneous expense	29.59
Total	\$7,813.64

Maintenance of way and structures:	
Repairs of roadway (includes separation of grade crossings, \$46,332)	\$65,564.57
Renewals of rails	131.57
Renewals of ties	2,997.28
Repairs and renewals of bridges and culverts .	21,002.06
Repairs and renewals of fences, road crossings, signs, and cattle guards	694.78
Repairs and renewals of buildings and fixtures	9,950.88
Stationery and printing	42.85
Miscellaneous expense	55.55
Total	\$100,439.54
Maintenance of equipment:	
Superintendence	\$845.90
Repairs and renewals of locomotives	7,582.44
Repairs and renewals of passenger cars . .	225.39
Repairs and renewals of freight cars	4,167.94
Miscellaneous expense	185.18
Total	\$13,006.85
EXPENSES OF OPERATION.	
Conducting transportation:	
Superintendence	\$3,122.04
Engine and roundhouse men	24,465.13
Fuel for locomotives	63,045.57
Water supply for locomotives	1,280.97
Oil, tallow, and waste for locomotives . . .	1,320.29
Other supplies for locomotives	250.17
Train service	18,213.37
Train supplies and expenses	1,903.75
Switchmen, flagmen, and watchmen	7,863.16
Telegraph expenses	3,916.76
Station service	11,857.33
Station supplies	1,184.47
Car service—balance	18,227.81
Loss and damage	5,909.22
Clearing wrecks	40.67
Advertising	231.89
Outside agencies	45.29
Rentals for tracks, yards, and terminals . .	6,000.04
Stationery and printing	587.28
Miscellaneous expense	2.50
Total	\$169,467.71

Recapitulation:	
General expenses	\$7,813.64
Maintenance of way and structures	100,439.54
Maintenance of equipment	13,006.85
Conducting transportation	169,467.71
Total operating expenses	<u>\$290,727.74</u>
Percentage of operating expenses to gross earnings	81.172

GENERAL BALANCE SHEET.

Cost of road	\$888,755.37
Cost of equipment	98,175.10
Total permanent investments	<u>\$986,930.47</u>
Due from solvent companies and individuals	26,276.98
Total	<u>\$1,013,207.45</u>
Capital stock, common	\$500,000.00
Funded debt	357,000.00
Audited vouchers and accounts	21,150.67
Interest accrued and not yet due	3,570.00
Profit and loss balance—surplus	131,486.78
Total	<u>\$1,013,207.45</u>

CAPITAL STOCK.

Capital stock authorized by law, common	\$500,000.00
Capital stock authorized by votes of company, common	500,000.00
Capital stock issued and outstanding, common	500,000.00
Number of shares issued and outstanding, common	5,000
Number of stockholders, common	5
Number of stockholders in New Hampshire, common	5
Amount stock held in New Hampshire, common	\$500.00

FUNDED DEBT.

DESCRIPTION OF BONDS, ETC.	Rate of interest.	Date of maturity.	Amount outstanding.	Interest paid during the year.
First mortgage	4%	Apr. 1, 1924	\$357,000.00	\$14,280.00

VOLUME OF TRAFFIC, ETC.

Passenger traffic:

Number of passengers carried paying revenue	245,552
Number of passengers carried one mile . . .	4,784,808
Number of passengers carried one mile per mile of road operated	184,031
Average length of journey per passenger, miles	19.62
Average amount received from each passenger	\$0.44908
Average amount received per passenger per mile carried . . . . .	.02289
Passenger earnings (gross) per mile of road operated	4,700.34
Passenger earnings (gross) per passenger-train mile run	1.2661

Freight traffic:

Number tons of freight hauled earning revenue	947,093
Number of tons of freight hauled one mile . .	23,039,821
Number of tons of freight hauled one mile per mile of road operated	886,147
Average length of haul per ton, miles	24.33
Average amount received for each ton freight .	\$0.24555
Average amount received per ton per mile hauled . . . . .	.01009
Freight earnings (gross) per mile of road operated	8,951.77
Freight earnings (gross) per freight-train mile run	1.43192

Operating expenses:

Operating expenses per mile of road operated .	11.18184
Operating expenses per revenue-train mile run	1.19805

Train mileage:

Miles run by passenger trains	80,127
Miles run by freight trains	146,144
Miles run by mixed trains	16,397
Total mileage of trains earning revenue . .	242,668
Miles run by switching trains	76,133
Miles run by construction and other trains .	6,875
Total train mileage	325,676

Fares and freights:

Average rate of fare per mile on single local tickets	2.050 cents
Average rate of fare per mile on mileage tickets (500 miles)	2.250 "
Average rate of fare per mile on mileage tickets (1,000 miles)	2.000 "

Average rate of fare per mile on season tickets	0.589 cents
Average rate of fare per mile on joint tickets	2.571 "
Average rate of freight per ton mile on local way-bill	4.640 "
Average rate of freight per ton mile on joint way-bill	1.043 "
Average number of persons employed	136

RAILROAD OWNED.

Length of main line in New Hampshire	25.19 miles
Total length of main line	26.00 "
Total length of second track	17.40 "
Total length of side track, etc.	8.61 "
Total length of track owned in New Hampshire	51.20 "
Total length of track owned	52.01 "

RAILROAD OPERATED.

Length of main line in New Hampshire	25.19 miles
Total length of main line	26.00 "
Total length of second track	17.40 "
Total length of side track, etc.	8.61 "
Total length of track operated in New Hampshire	51.20 "
Total length of track operated	52.01 "

RAILROAD CROSSINGS IN NEW HAMPSHIRE.

Crossings with Highways.

Number of crossings of company's railroad with highways at grade	22
Number of highway grade crossings unprotected	22
Number of highway grade crossings finally abolished during the year	5
Number of highway bridges 18 feet (or more) above track	1
Number of highway bridges less than 18 feet above track	1
Height of lowest highway bridge above track	17 ft. 3 in.

BRIDGES REPAIRED DURING THE YEAR.

Number and Location.	Description of Bridge.	Description of Work Done.
91 Windsor	Iron, riveted through	Ties and guards on 3 spans.

DESCRIPTION OF RAILROADS AND BRANCHES OWNED BY THIS COMPANY.

NAME OF RAILROAD OR BRANCH.	Main or Branch Line.	Termini of Main or Branch Line.	Length of line in miles.		Second track.		Third track.		Fourth track.		Side track, etc.		Length com- puted as single track.	
			Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.	Total.	In New Hampshire.
Sullivan County Road	Main	Beoley, Falls to [Windsor, Vt.]	26.00	25.19	17.40	17.40	.....	.....	.....	.....	8.61	8.61	52.01	51.20

DESCRIPTION OF EQUIPMENT.

ROLLING STOCK.	Number owned.		Number owned and leased.		Number equipped with power driving-wheel brakes.		Maximum weight, pounds.		Average weight, pounds.		Number equipped with power train brakes.		Number equipped with automatic couplers.		Name of coupler used.
	Owned.	Used by leased roads.	Total owned and leased.												
Passenger locomotives	5		5		5		113,000		95,920						
Freight "	2		2		2		142,400		110,200						
Switching, etc. "	2		2		2		78,400		78,200						
Total	9		9		9										
Box cars.	40		40								40		40		Gould.

NEW BRIDGES BUILT DURING THE YEAR.

NUMBER AND LOCATION.	Description of bridge replaced.	Description of new bridge.	Length of span and number of tracks.	By whom built.
A 81 North Walpole.....	Grade crossing	Deck plate girder...	25 ft., 2 tracks	Baltimore Bridge Co.....
B 81 .....	.....	" " .....	25 ft., 2 tracks	"
C 81 .....	.....	Stone arch	14 ft. 6 in., 2 tracks..	Ross & Fowler

LIST OF ACCIDENTS.

	From causes beyond their own control (in New Hampshire).		From their own misconduct or carelessness (in New Hampshire).		Total in New Hampshire.		Total on all lines operated.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.....								
Employees.....								
Others.....			1		1		1	
Total.....			1		1		1	

STATEMENT OF EACH ACCIDENT IN NEW HAMPSHIRE.

July 12. Charlestown. Fred White, trespasser, was found dead between the rails.

PROPER ADDRESS OF THE COMPANY.

SULLIVAN COUNTY RAILROAD,

BOSTON, MASS.

Corporate office, Concord, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, John H. Albin, Concord, N. H.; treasurer and clerk of corporation, Henry A. Albin, Concord, N. H.; assistant treasurer, Herbert E. Fisher, Boston, Mass.; general auditor, William J. Hobbs, Boston, Mass.; general traffic manager, William F. Berry, Boston, Mass.; general passenger and ticket agent, Dana J. Flanders, Boston, Mass.; general freight agent, Michael T. Donovan, Boston, Mass.; superintendent, Harley E. Folsom, Lyndonville, Vt.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

John H. Albin, Concord, N. H.; James H. Williams, Bellows Falls, Vt.; George H. Stowell, Claremont, N. H.; George E. Anderson, Nashua, N. H.; George W. Abbott, Springfield, Mass.; Henry A. Albin, Concord, N. H.; John E. Allen, Keene, N. H.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

JOHN H. ALBIN,
President.

HERBERT E. FISHER,
Assistant Treasurer.

WILLIAM J. HOBBS,
General Auditor.

STATE OF NEW HAMPSHIRE.

MERRIMACK, ss. Concord, N. H., September 23, 1904. Then personally appeared the above-named John H. Albin and made oath that the foregoing certificate by him subscribed is, to the best of his knowledge and belief, true.

Before me,

HENRY F. HOLLIS,
Justice of the Peace.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. Boston, Mass., September 26, 1904. Then personally appeared the above-named H. E. Fisher and William J. Hobbs, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

FREDERICK A. CARR,
Justice of the Peace.

REPORT

OF THE

SUNCOOK VALLEY RAILROAD

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.

Rental received from lease of road	\$14,700.00
Salaries and maintenance of organization	287.01
Net divisible income	\$14,412.99
Dividends declared, 6 per cent on common stock	14,400.00
Surplus for the year ending June 30, 1904	\$12.99
Amount of surplus June 30, 1903	377.96
Total surplus June 30, 1904	\$390.95

GENERAL BALANCE SHEET.

Cost of road	\$348,199.19
Cash	2,587.76
Total	\$350,786.95
Capital stock, common	\$341,700.00
Contributions	8,696.00
Profit and loss balance—surplus	390.95
Total	\$350,786.95

CAPITAL STOCK.

Capital stock authorized by law, common	\$500,000.00
Capital stock authorized by votes of company, common	341,700.00

Capital stock issued and outstanding, common	\$240,000.00
Non-dividend paying stock	101,700.00
Total capital stock outstanding	\$341,700.00
Number of shares issued and outstanding, common	3,417
Number of stockholders, common	210
Number of stockholders in New Hampshire, common	188
Amount stock held in New Hampshire, common	\$324,200.00
RAILROAD OWNED.	
Length of main line, Suncook to Pittsfield	17.41 miles
Length of side track, etc	3.56 "
Total length of track owned	20.97 miles

GENERAL REMARKS AND EXPLANATIONS.

For correct mileage see report of the operating company, namely, the Boston & Maine Railroad.

PROPER ADDRESS OF THE COMPANY.

SUNCOOK VALLEY RAILROAD.

WALTER M. PARKER, *Treasurer*,

MANCHESTER, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Hiram A. Tuttle, Pittsfield, N. H.; treasurer, Walter M. Parker, Manchester, N. H.; clerk of corporation, Nathan P. Hunt, Manchester, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

James B. Tennant, Epsom, N. H.; Charles H. Carpenter, Chichester, N. H.; Eugene S. Head, Hooksett, N. H.; Hiram A. Tuttle, Pittsfield, N. H.; Uberto C. Crosby, Manchester, N. H.; George E. Kent, Exeter, N. H.; Josiah Carpenter, Manchester, N. H.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

HIRAM A. TUTTLE,
President.

WALTER M. PARKER,
Treasurer.

STATE OF NEW HAMPSHIRE.

HILLSBOROUGH, ss. August 29, 1904. Then personally appeared the above-named Walter M. Parker and Hiram A. Tuttle and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

ORIEN B. DODGE,
Justice of the Peace.

REPORT

OF THE

UPPER COÖS RAILROAD COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Rental received from lease of road	\$66,685.00
Expenses and charges upon income accrued during the year:	
Salaries and maintenance of organization	\$500.00
Interest on funded debt	45,185.00
Total expenses and charges upon income . .	45,685.00
Net divisible income	\$21,000.00
Dividends declared, 6 per cent on common stock	21,000.00
GENERAL BALANCE SHEET.	
Cost of road	\$1,161,478.12
Cost of equipment	231,521.88
Total permanent investments	\$1,393,000.00
Capital stock, common	\$350,000.00
Funded debt	1,043,000.00
Total	\$1,393,000.00
CAPITAL STOCK.	
Capital stock authorized by law, common . .	\$350,000.00
Capital stock authorized by votes of company, common	350,000.00
Capital stock issued and outstanding, common .	350,000.00

Number of shares issued and outstanding, common	3,500
Number of stockholders, common	54
Number of stockholders in New Hampshire, common	13
Total stock held in New Hampshire	\$114,600.00

REAL ESTATE MORTGAGES.

DESCRIPTION OF MORTGAGED PROPERTY.	Rate of interest.	Mortgage when due.	Amount.	Interest paid during year.
First Mortgage	4%	May 1, 1930	\$350,600.00	\$14,000.00
" "	4½%	" "	693,000.00	\$1,185.00
Total			\$1,043,000.00	\$45,185.00

PROPER ADDRESS OF THE COMPANY.

UPPER COÖS RAILROAD COMPANY.

BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, George Van Dyke, Lancaster, N. H.; treasurer, Thomas S. McGowen, Boston, Mass.; clerk of corporation, Chester B. Jordan, Lancaster, N. H.; general counsel, Irving W. Drew, Lancaster, N. H.; general manager, George F. Evans, Portland, Me.; superintendent, George F. Blake, Lancaster, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

George Van Dyke, Lancaster, N. H.; Irving W. Drew, Lancaster, N. H.; Henry O. Kent, Lancaster, N. H.; Parker W. Whittemore, Newton, Mass.; Sherburne M. Merrill, Newton, Mass.; Thomas S. McGowen, Boston, Mass.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

THOMAS S. MCGOWEN,
Treasurer.

STATE OF MASSACHUSETTS.

SUFFOLK, ss. September 10, 1904. Then personally appeared the above-named Thomas S. McGowen and made oath that the foregoing certificate by him subscribed is, to the best of his knowledge and belief, true.

Before me,

DONALD M. HILL,
Justice of the Peace.

REPORT

OF THE

WILTON RAILROAD COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Rental received from lease of road, 99 years from October 1, 1883	\$20,400.00
Dividends declared, 8½ per cent on common stock	20,400.00
Surplus for the year ending June 30, 1904	nothing
Contingent fund	\$1,000.00
GENERAL BALANCE SHEET.	
Cost of road	\$242,600.00
Cash	3,900.25
Total	\$246,500.25
Capital stock, common	\$240,000.00
Capital stock never capitalized	2,600.00
Total capital stock	\$242,600.00
Current liabilities:	
Dividends not called for	\$2,900.25
Contingent fund	1,000.00
Total current liabilities	3,900.25
Total	\$246,500.25

CAPITAL STOCK.	
Capital stock authorized by law, common . . .	\$250,000.00
Capital stock authorized by votes of company, common . . .	240,000.00
Capital stock issued and outstanding, common . . .	240,000.00
Number shares issued and outstanding, common . . .	2,400
Number of stockholders, common . . .	230
Number of stockholders in New Hampshire, common . . .	202
Amount stock held in New Hampshire, common . . .	\$199,200.00
RAILROAD OWNED.	
Length of main line in New Hampshire . . .	15.50 miles
Total length of main line . . .	15.50 "

PROPER ADDRESS OF THE COMPANY.

WILTON RAILROAD COMPANY,

NASHUA, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, George O. Whiting, Lexington, Mass.; treasurer, William E. Spalding, Nashua, N. H.; clerk of corporation, I. S. Whiting, Wilton, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

J. A. Spalding, Nashua, N. H.; George O. Whiting, Lexington, Mass.; Charles A. Ramsdell, Winchester, Mass.; Charles A. Burns, Somerville, Mass.; George E. Anderson, Nashua, N. H.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

GEORGE O. WHITING,
President.

WILLIAM E. SPALDING
Treasurer.

STATE OF NEW HAMPSHIRE.

HILLSBOROUGH, ss. October 24, 1904. Then personally appeared the above-named George O. Whiting, president, and William E. Spalding, treasurer, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

ARTHUR G. SHATTUCK,
Notary Public.

REPORT

OF THE

WORCESTER, NASHUA & ROCHESTER RAILROAD COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Rental received from lease of road	\$250,000.00
Interest on bank account	150.32
Gross income	\$250,150.32
Expenses and charges upon income accrued during the year:	
Salaries and maintenance of organization	\$2,267.10
Interest on funded debt	71,040.00
Total expenses and charges upon income . .	73,307.10
Net divisible income	\$176,843.22
Dividends declared, 2¾ and 3 per cent on common stock (5¾ per cent on 30,644 shares)	176,203.00
Surplus for the year ending June 30, 1904 . .	\$640.22
Amount of deficit June 30, 1903	280,122.03
Total deficit June 30, 1904	\$279,481.81
GENERAL BALANCE SHEET.	
Cost of road	\$4,138,584.99
Cost of equipment	415,336.03
Total permanent investments	\$4,553,921.02

Cash	\$38,857.17	
Worcester, Nashua & Rochester Railroad stock	35,400.00	
Total cash and current assets		\$74,257.17
Profit and loss balance—deficit		279,481.81
Total		\$4,907,660.00
Capital stock, common		\$3,099,800.00
Funded debt		1,776,000.00
Current liabilities:		
Matured interest coupons unpaid (including coupons due July 1)		28,060.00
Accrued liabilities:		
Interest accrued and not yet due		3,800.00
Total		\$4,907,660.00

PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS
DURING THE YEAR.

All additions to property accounts are made by the Boston & Maine Railroad.

CAPITAL STOCK.

Capital stock authorized by law, common	\$3,600,000.00
Capital stock authorized by votes of company, common	3,099,800.00
Capital stock issued and outstanding, common	3,099,800.00
Number of shares issued and outstanding, common	30,998
Number of stockholders, common	792
Number of stockholders in New Hampshire, common	190
Amount of stock held in New Hampshire, common	\$220,700.00

RAILROAD OWNED.

Length of main line in New Hampshire	55.02 miles
Total length of main line	94.48 "
Total length of second track	18.13 "
Length of side track, etc., in New Hampshire	19.06 "
Total length of side track, etc.	45.28 "
Total length of track owned in New Hampshire	74.08 "
Total length of track owned	157.89 "

FUNDED DEBT.

DESCRIPTION OF BONDS, ETC.	Rate of interest.	Date of maturity.	Amount outstand'g.	Interest paid during year.
First mortgage bonds.....	4%	Jan. 1, 1906	\$150,000.00	\$3,000.00
“ “ “	4%	Jan. 1, 1913	511,000.00	10,220.00
“ “ “	4%	Jan. 1, 1930	735,000.00	14,600.00
“ “ “	4%	Oct. 1, 1934	380,000.00	15,180.00
Total.....			\$1,776,000.00	\$43,000.20

PROPER ADDRESS OF THE COMPANY.

WORCESTER, NASHUA & ROCHESTER RAILROAD COMPANY,
BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, George G. Haven, 32 Nassau street, New York; treasurer and clerk of corporation, Charles H. Bowen, 53 State street, Boston, Mass.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

George G. Haven, James N. Jarvie, Adrian Iselin, Jr., Frederic Cromwell, Richard A. McCurdy, New York, N. Y.; Henry L. Higginson, Boston, Mass.; Nathaniel Thayer, Lancaster, Mass.; Albert Wallace, Rochester, N. H.; Charles H. Bowen, Brookline, Mass.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

GEORGE G. HAVEN,
HENRY L. HIGGINSON,
ADRIAN ISELIN, JR.,
ALBERT WALLACE,
CHARLES H. BOWEN,
Directors.

CHARLES H. BOWEN,
Treasurer.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. July 29, 1904. Then personally appeared the above-named Henry L. Higginson, Albert Wallace, C. H. Bowen, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

EUGENE W. LEIGHTON,

Notary Public.

STATE OF NEW YORK.

NEW YORK, ss. New York, August 2, 1904. Then personally appeared the above-named G. G. Haven and Adrian Iselin, Jr., and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

MARTIN EICHE,

Notary Public.

PART III.

STREET RAILWAY RETURNS.

REPORT

OF THE

BERLIN STREET RAILWAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.

Gross income from operation	\$40,876.31
Operating expenses	38,262.33
Net income from operation	\$2,613.98
Charges upon income accrued during the year:	
Interest on funded debt	\$5,250.00
Interest and discount on unfunded debts and loans	738.33
Total charges and deductions from income	5,988.33
Deficit for year ending June 30, 1904	\$3,374.35
Amount of deficit June 30, 1903	3,654.77
Total deficit June 30, 1904	\$7,029.12

EARNINGS FROM OPERATION.

Receipts from passengers carried	\$36,605.69
Receipts from park and casino	1,817.12
Miscellaneous	2,453.50
Gross income from operation	\$40,876.31

EXPENSES OF OPERATION.

General expenses :	
Salaries of general officers and clerks	\$1,924.00
General office expenses and supplies	796.12
Insurance	601.12
New cars, storage battery, etc.	12,249.10

Maintenance of roadway and buildings:	
Repairs of roadbed and track	\$4,458.25
Repairs of electric line construction	254.85
Removal of snow and ice	801.87
Repairs of buildings at park	605.00
Maintenance of equipment:	
Repairs of cars and other vehicles	2,650.26
Repairs of electric equipment of cars	533.66
Transportation expenses:	
Cost of electric motive power	6,000.00
Wages and compensation of persons employed in conducting transportation	6,833.48
Damages for injuries to persons and property .	554.59
Total operating expenses	\$38,262.30

PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS
DURING THE YEAR.

Additional cars (1 in number) leased	\$2,880.00
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GENERAL BALANCE SHEET.

Assets.

Railway:		
Roadbed and tracks	\$109,900.00	
Electric line construction, includ- ing poles, wiring, feeder lines, etc.	35,000.00	
Interest accrued during construc- tion of railway	5,000.00	
Salaries, engineerng, and other expenses incident to construc- tion	6,000.00	
Total cost of railway owned		\$155,900.00
Equipment:		
Cars and other rolling stock and vehicles	\$10,500.00	
Electric equipment of same	12,400.00	
Total cost of equipment owned		22,900.00
Lands and buildings:		
Land necessary for operation of railway	\$9,200.00	

Electric power stations, including equipment	\$6,000.00	
Other buildings necessary for operation of railway	21,000.00	
Total cost of lands and buildings owned		\$36,200.00
Total permanent investments		\$215,000.00
<i>Liabilities.</i>		
Capital stock:		
Common	\$80,000.00	
Preferred	30,000.00	
Total capital stock		\$110,000.00
Funded debt		105,000.00
Total		\$215,000.00

CAPITAL STOCK.

Capital stock authorized by law, common	\$80,000.00	
Capital stock authorized by law, preferred	30,000.00	
Total amount authorized by law		\$110,000.00
Capital stock authorized by votes of company, common	\$80,000.00	
Capital stock authorized by votes of company, preferred	30,000.00	
Total amount authorized by vote		\$110,000.00
Capital stock issued and outstanding, common	\$80,000.00	
Capital stock issued and outstanding, preferred	30,000.00	
Total capital stock outstanding		\$110,000.00
Total capital stock liability		\$110,000.00
Number of shares issued and outstanding, common	800	
Number of shares issued and outstanding, preferred	300	
Total number of shares outstanding		1,100
Number of stockholders, common	7	
Number of stockholders, preferred	34	

Number of stockholders in New Hampshire, common	3
Number of stockholders in New Hampshire, preferred	31
Total stockholders in New Hampshire	31
Amount of stock held in New Hampshire, common	\$40,000.00
Amount of stock held in New Hampshire, preferred	14,700.00
Total stock held in New Hampshire	\$54,700.00

FUNDED DEBT.

Bonds:	
Rate of interest	5 per cent.
Date of maturity	Feb. 1, 1922
Amount outstanding	\$105,000.00
Interest paid during year	5,250.00

VOLUME OF TRAFFIC, ETC.

Number of passengers carried during year	724,458
Number of passengers carried per mile of railway track operated	96,594
Number of round trips run	9,555
Number of car miles run	71,832
Average number of persons employed	16

EQUIPMENT OWNED.

Box passenger cars equipped for electric power	3
Open passenger cars equipped for electric power	4
Total passenger cars of all kinds	7
Mail cars, electric	7
Number of all above cars with 8 wheels	7
Snow plows	1
Electric motors	24

DESCRIPTION OF RAILWAY.

Total length of railway line owned and operated	7.50 miles
Length of sidings, switches, etc., owned and operated . . . . .	.25 "
Total length, computed as single track	7.75 "

Motive power, all electric.

System of electric motive power used by the company. overhead trolley. Lorain steel, and General Electric motors.

This railway is located in Berlin and Gorham, N. H.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.	Number of tracks at crossing.	
	Railroad.	Railway.
With Grand Trunk, Berlin Mills spur track, Berlin...	1	1
With International Paper Co., Berlin.	1	1
With Grand Trunk, Berlin Mills spur track at the Cascade Mills, Gorham	1	1
Total number of tracks at crossings ..	3	3

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers						
Employees						
Other persons..			1	1	1	1
Total.....			1	1	1	1

STATEMENT OF EACH ACCIDENT.

Ed Hall laid on track in night time; hand cut off.

Chester Baker, eighteen months old, standing on track as car came on a curve, killed instantly.

PROPER ADDRESS OF THE COMPANY.

BERLIN STREET RAILWAY.

BERLIN, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Frank Ridlon, Boston, Mass.; treasurer, E. W. Gross, Auburn, Maine; clerk of corporation, A. I. Lawrence, Berlin, N. H.; general counsel, George F. Rich, Berlin, N. H.; general manager, E. W. Gross, Auburn, Me.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

Frank Ridlon, Boston, Mass.; E. W. Gross, Auburn, Me.; C. W. McAlister, Auburn, Me.; William Ames, Lewiston, Me.; H. I. Goss, Berlin, N. H.; A. I. Lawrence, Berlin, N. H.; J. F. Libby, Gorham, N. H.

I hereby certify that the statements contained in the foregoing report are full, just, and true.

E. W. GROSS,
Treasurer.

STATE OF NEW HAMPSHIRE.

Coos, ss. October 21, 1904. Then personally appeared the above-named E. W. Gross, and made oath that the foregoing certificate by him subscribed is, to the best of his knowledge and belief, true.

Before me,

HERBERT I. GOSS,
Justice of the Peace.

REPORT

OF THE

BOSTON & MAINE RAILROAD

[Operating the Concord and Manchester Electric Branch.]

FOR THE YEAR ENDING JUNE 30, 1904.

Earnings and expenses, statistics relating to passengers carried, accidents and railway operated include Concord Street Railway from December 1, 1903, on which date it was absorbed by the Concord & Montreal Railroad and made a part of the Concord & Manchester Electric Branch for operating purposes.

GENERAL EXHIBIT FOR THE YEAR.

Gross income from operation	\$106,653.10
Operating expenses	109,309.62
Deficit	\$2,656.52
Taxes	707.69
Deficit for year ending June 30, 1904, included in Boston & Maine Railroad account . . .	\$3,364.21

EARNINGS FROM OPERATION.

Receipts from passengers carried	\$104,080.35
Receipts from rentals of buildings and other property	1,847.77
Receipts from advertising in cars	724.98
Gross income from operation	\$106,653.10

EXPENSES OF OPERATION.

General expenses:	
General office expenses and supplies	\$686.31
Legal expenses	2.00
Insurance	855.17

Maintenance of roadway and buildings:	
Repairs of roadbed and track	\$8,909.80
Repairs of electric line construction	3,016.56
Removal of snow and ice	2,023.72
Repairs of buildings	1,218.90
Maintenance of parks, etc.	1,891.38
Maintenance of equipment:	
Repairs of cars and other vehicles	7,917.58
Repairs of electric equipment of cars	7,451.41
Other expenses	3,536.63
Transportation expenses:	
Cost of electric motive power	37,485.62
Wages and compensation of persons employed in conducting transportation	29,209.28
Damages for injuries to persons and property	3,036.45
Other transportation expenses:	
Advertising	417.25
Stationery and printing	1,079.57
Miscellaneous	571.99
Total operating expenses	\$109,309.62

PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS
DURING THE YEAR.

Extension of railway and tracks and new electric line construction	\$2,878.83
Additional cars (4 in number) and electrical equipment of the same	24,107.61
Additional land necessary for operation of rail- way	312.50
New electric power stations, including machinery, additional equipment of power stations, other new buildings necessary for operation of rail- way	11,625.70
Net addition to property accounts for year	\$33,166.98

GENERAL BALANCE SHEET.

Cost of road and equipment does not include
Concord Street Railway.

Assets.

Railway:	
Roadbed and tracks	\$235,333.14

Electric line construction, including poles, wiring, feeder lines, etc.	\$61,003.65	
Total cost of railway owned		\$296,336.79
Cars and other rolling stock and vehicles, and electric equipment of same		106,310.37
Land and buildings:		
Land necessary for operation of railway	\$15,305.54	
Electric power stations, including equipment and other buildings necessary for operation	49,938.83	
Total cost of lands and buildings owned		65,244.37
Land at Concord, N. H. (for pleasure park)		3,587.07
Total cost to June 30, 1904		\$471,478.60
<i>Liabilities.</i>		
Built as a branch of the Concord and Montreal Railroad, and paid for by issue of their bonds.		

VOLUME OF TRAFFIC, ETC.

Number of passengers carried during the year	1,521,315
Number of passengers carried per average mile of railway track operated	66,029
Number of round trips run	55,642
Number of car miles run	610,314
Average number of persons employed	83
Operation of Concord Street Railway included from December 1, 1903 (see page 133).	

EQUIPMENT OWNED.

Box passenger cars equipped for electric power	16
Number of all above cars with 8 wheels	16
Number of electric cars equipped with fenders	16
Construction, repair, and other work-cars	1
Snow plows	1

DESCRIPTION OF RAILWAY.

Length of railway line owned and operated	27.88 miles
Length of sidings, switches, etc., owned and operated	2.45 "
Total length computed as single track	30.33 "
Average length of line operated during the year	23.04 "

Motive power, all electric.

System of electric motive power used by the company, 500-volt direct current supplied partly by direct current generators and partly by rotary sub-stations.

This railway is located in Concord, Pembroke, Allenstown, and Hooksett.

LIST OF ACCIDENTS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.....		1		1		2
Employees.. ...		2				2
Others.....		1		11		12
Total.....		4		12		16

STATEMENT OF EACH ACCIDENT.

July 28, 1903. Pembroke. L. A. Hyatt. Horse frightened at work car; ran against a pole, throwing driver out, cutting his face.

August 30, 1903. Bow. Joseph Petitot, alias Joseph Brown. Man lay beside track with arm across rail, intoxicated; car could not be stopped in time to avoid running over arm.

September 19, 1903. Hooksett. Harry Kling. Team driving up hill too near track; car struck wagon, demolishing same and bruising man's leg.

November 19, 1903. Suncook. Mrs. Wiggins and Mrs. Batchelder. Horse became frightened and tipped women out of buggy, injuring Mrs. Wiggins' arm and breaking Mrs. Batchelder's leg.

February 13, 1904. Hooksett. Mrs. J. C. Colby. Horse frightened; ran down sidewalk; sleigh struck pole, throwing lady out; arm injured.

June 21, 1904. Hooksett. G. F. Harlow. Stepped on stone as he alighted from car, spraining ankle.

January 19, 1904. Maine and Pleasant streets. F. A. Currier. Face cut; side injured. Man was standing in sleigh and when crossing track sleigh struck rails, throwing man out.

January 3, 1904. Car barn yard. D. L. Sawyer, conductor. Was releasing hand brake, which slipped, striking and injuring his hand.

January 31, 1904. South and Pleasant streets. B. W. Couch and G. F. Underhill. Sleigh runner struck rail, throwing occupants out, bruising them more or less.

March 31, 1904. South Main street. John Crane. Horse frightened; wagon seat tipped and man jumped to save himself; sprained his ankle.

April 7, 1904. Pleasant and South streets. Miss Johnson. Horse became frightened; carriage struck a tree, throwing occupants out; Miss Johnson was bruised about hip and knee.

May 3, 1904. North Main street. John Duffy. Stepped from car before it stopped, missed his footing and fell; back of head and mouth cut.

May 5, 1904. North State street. Child of J. K. Martin. Child ran across track and was struck by car. Motorman did not have time to stop car. Head bruised; back and thigh injured.

June 25, 1904. Corner Stone and Broadway. M. E. Thompson, conductor. Slipped from car, while car was in motion, spraining ankle.

PROPER ADDRESS OF THE COMPANY.

BOSTON & MAINE RAILROAD.

Boston, Mass.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

[Management and operation of Concord & Manchester Electric Branch directed by officers of the Boston & Maine Railroad.]

President, Lucius Tuttle, Boston, Mass.; third vice-president and general manager, Frank Barr, Boston, Mass.; treasurer, Herbert E. Fisher, Boston, Mass.; fourth vice-president and general auditor, William J. Hobbs, Boston, Mass.; clerk of corporation, William B. Lawrence, Boston, Mass.; superintendent, William F. Ray, Concord, N. H.; assistant superintendent, H. A. Albin, Concord, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Lucius Tuttle, Boston, Mass.; Samuel C. Lawrence, Medford, Mass.; Richard Olney, Boston, Mass.; Alvah W. Sulloway, Franklin, N. H.; Joseph H. White, Brookline, Mass.; Walter Hunnewell, Wellesley, Mass.; Henry R. Reed, Boston, Mass.; Lewis Cass Ledyard, New York, N. Y.; Henry M. Whitney, Boston, Mass.; Henry F. Dimock, New York, N. Y.; William Whiting, Holyoke, Mass.; Charles M. Pratt, New York, N. Y.; Alexander Cochrane, Boston, Mass.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

LUCIUS TUTTLE,
President.

HERBERT E. FISHER,
Treasurer.

WILLIAM J. HOBBS,
Fourth Vice-President and General Auditor.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. Boston, September 29, 1904. Then personally appeared the above-named Lucius Tuttle, Herbert E. Fisher, and William J. Hobbs, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

E. A. RYDER,
Justice of the Peace.

REPORT

OF THE

CHESTER & DERRY RAILROAD ASSOCIATION

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$13,719.27
Operating expenses	8,791.86
Net income from operation	\$4,927.41
Charges upon income accrued during the year:	
Interest on funded debt	\$2,500.00
Interest and discount on unfunded debts and loans	418.71
Total charges and deductions from income	2,918.71
Surplus for year ending June 30, 1904	\$2,008.70
Amount of surplus June 30, 1903	2,571.78
Charged out	126.00
Total surplus June 30, 1904	\$4,454.48

EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$11,727.24
Receipts from mails	512.57
Receipts from carriage of freight and express	1,479.46
Gross income from operation	\$13,719.27

EXPENSES OF OPERATION.	
General expenses:	
General office expenses and supplies	\$23.10
Insurance	419.46

Maintenance of roadway and buildings:	
Repairs of roadbed and track	\$988.91
Removal of snow and ice	271.39
Repairs of buildings	6.00
Maintenance of equipment:	
Repairs of cars and other vehicles	273.56
Repairs of electric equipment of cars	121.66
Transportation expenses:	
Cost of electric motive power	3,000.00
Wages and compensation of persons employed in conducting transportation	3,277.96
Rentals of buildings and other property	37.00
Heating	108.00
Sundry	254.82
Total operating expenses	\$8,791.86

PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS
DURING THE YEAR.

Extension of railway and tracks	\$225.00
Pavilion	111.15
Total additions to property accounts	\$336.15

GENERAL BALANCE SHEET.

<i>Assets.</i>	
Railway:	
Roadbed and tracks	\$64,094.00
Electric line construction includ- ing poles, wiring, feeder lines, etc.	17,709.34
Total cost of railway owned	\$81,803.34
Equipment:	
Cars and other rolling stock and vehicles	\$7,025.23
Electric equipment of same	6,001.59
Snowplow	1,700.00
Total cost of equipment owned	14,726.82
Land and buildings:	
Land necessary for operation of railway	\$3,500.00

Electric power stations, including equipment	\$2,500.00	
Other buildings necessary for operation of railway	3,213.94	
Total cost of lands and buildings owned		\$9,213.94
Pavilion		3,013.78
Cash and current assets:		
Cash	\$2,375.10	
Other cash and current assets	1,000.00	
Total cash and current assets		3,375.10
Total		\$112,132.98
<i>Liabilities.</i>		
Capital stock, common		\$50,000.00
Loans and bills payable		7,678.50
Interest accrued and not yet due		208.33
Profit and loss balance—surplus		4,246.15
Total		\$112,132.98

CAPITAL STOCK.

Capital stock authorized by law, common	\$50,000.00
Capital stock authorized by votes of company, common	50,000.00
Capital stock issued and outstanding, common	50,000.00
Number of shares issued and outstanding, common	500
Number of stockholders, common	137
Number of stockholders in New Hampshire, common	134
Amount stock held in New Hampshire, common	\$49,500.00

FUNDED DEBT.

First mortgage, 5-30 gold bonds:	
Rate of interest	5 per cent
Amount outstanding	\$50,000.00
Interest paid during year	2,500.00

VOLUME OF TRAFFIC, ETC.

Number of passengers carried during the year	267,258
Number of car miles run	59,916
Average number of persons employed	6

EQUIPMENT OWNED.	
Box passenger cars equipped for electric power	3
Open passenger cars equipped for electric power	4
Total passenger cars of all kinds . . .	9
Snow plows	1
Freight car	1
Generators.	

DESCRIPTION OF RAILWAY.	
Length of railway line owned and operated .	7 $\frac{3}{4}$ miles

Motive power, electric.

This railway is located in Chester and Derry, N. H.

PROPER ADDRESS OF THE COMPANY.

CHESTER & DERRY RAILROAD ASSOCIATION.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Greenleaf K. Bartlett; vice-president, Charles Bartlett; treasurer, F. J. Shepard; auditor and clerk of corporation, A. H. Wilcomb; general counsel, G. K. Bartlett; general manager, F. J. Shepard; superintendent, Charles Bartlett.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Greenleaf K. Bartlett, F. J. Shepard, Charles Bartlett, C. S. Campbell, Derry, N. H.; A. H. Wilcomb, Nathan W. Goldsmith, George S. West, Chester, N. H.

We hereby certify that the statements contained in the foregoing return are full, just, and true.

G. K. BARTLETT,
President.

CHARLES BARTLETT,
Superintendent.

STATE OF NEW HAMPSHIRE.

ROCKINGHAM, ss. August 29, 1904. Then personally appeared the above-named G. K. Bartlett, F. J. Shepard, and Charles Bartlett, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

JOSEPH B. BARTLETT,
Justice of the Peace.

REPORT

OF THE

CLAREMONT RAILWAY & LIGHTING COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.

Gross income from operation	\$31,136.21
Operating expenses	23,161.52
Net income from operation	\$7,974.69
Bonus from Coy Paper Company	1,000.00
Gross income above operating expenses	\$8,974.69
Charges upon income accrued during the year:	
Interest and discount on unfunded debts and loans	\$454.17
Taxes	1,057.04
Total charges and deductions from income	1,511.21
Total surplus June 30, 1904	\$7,463.48

EARNINGS FROM OPERATION.

Receipts from passengers carried	\$11,660.83
Receipts from carriage of mails	88.99
Receipts from carriage of freight and express	2,408.68
Receipts from advertising in cars	172.56
Other earnings from operation:	
Power sold (commercial service), \$1,152.70; municipal lights, \$5,294.31; commercial lights, \$10,091.68; material sold (profit), \$266.46	16,805.15
Gross income from operation	\$31,136.21

EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers and clerks . . .	\$2,215.15
General office expenses and supplies . . .	627.62
Insurance	22.40
Other general expenses:	
Repairs electric light equipment, \$1.75; incidental lighting expense, \$616.96; general lighting expense, \$789.83; miscellaneous repairs lighting, \$70.17; line repairs lighting, \$33.41	1,512.12
Maintenance of roadway and buildings:	
Repairs of roadbed and tracks	1,052.50
Repairs of electric line construction	11.12
Removal of snow and ice	572.47
Repairs of buildings	16.02
Maintenance of equipment:	
Repairs of cars and other vehicles	706.25
Repairs of electric equipment of cars	205.49
Transportation expenses:	
Cost of electric motive power	10,713.33
Wages and compensation of persons employed in conducting transportation	4,011.01
Damages for injuries to persons and property	12.00
Other transportation expenses:	
Incidental expenses (sand and oil for track, grease, waste, and oil for cars, etc.), \$685.09; labor handling freight, \$798.95	1,484.04
Total operating expenses	\$23,161.52

GENERAL BALANCE SHEET.	
<i>Assets.</i>	
Railway:	
Roadbed and tracks, including trestle and bridges	\$127,147.57
Electric line construction including poles, wiring, feeder lines, etc.	27,228.77
Interest accrued during construction of railway	11,666.78
Salaries, engineering, and other expenses incident to construction	16,873.76
Total cost of railway owned	\$182,916.88

Equipment:

Cars and other rolling stock and vehicles	\$17,528.64	
Electric equipment of same	16,501.25	
Other items of equipment	1,107.81	
Total cost of equipment owned		\$35,137.70

Land and buildings:

Land necessary for operation of railway, including water privilege	\$13,409.03	
Electric power stations, including equipment	110,072.82	
Other buildings necessary for operation of railway	5,289.99	
Total cost of land and buildings owned		\$128,771.84

Other permanent property:

Old lighting company cost, \$23,110; electric line construction lighting system, \$9,302.01; sundry equipment lighting system, including meters, etc., \$1,953.23		34,365.24
Total permanent investments		\$381,191.66

Cash and current assets:

Cash	\$503.27	
Bills and accounts receivable	800.00	
Total cash and current assets		1,303.27
Materials and supplies		1,614.44
Total		\$384,109.37

Liabilities.

Capital stock, common	\$90,551.00
Funded debt	75,000.00
Loans and bills payable	211,094.89
Profit and loss balance—surplus	7,463.48
Total	\$384,109.37

CAPITAL STOCK.

Capital stock authorized by law, common	\$100,000.00
Capital stock authorized by votes of company, common	100,000.00

Capital stock issued and outstanding, common .	\$90,100.00
Amount paid in on 99 shares not yet issued .	451.00
Total capital stock liability	\$90,551.00
Number of shares issued and outstanding, common	901
Number of stockholders, common	80
Number of stockholders in New Hampshire, common	73
Amount stock held in New Hampshire, common	\$19,900.00
FUNDED DEBT.	
First mortgage, 20-year gold bonds:	
Rate of interest	5 per cent
Date of maturity	July 1, 1922
Amount outstanding	\$75,000.00
VOLUME OF TRAFFIC, ETC.	
Number of passengers carried during year paying revenue	238,189
Number of passengers carried per mile of track operated, passenger lines	44,688
Number of round trips run	8,055
Number of car miles run, passenger cars	87,528
Average number persons employed in operation	25
Company commenced operation August 17, 1903.	
EQUIPMENT OWNED.	
Box passenger cars equipped for electric power .	4
Open passenger cars equipped for electric power	2
Total passenger cars of all kinds	6
Number of all above cars with 4 wheels	3
Number of all above cars with 8 wheels	3
Number of electric cars equipped with fenders .	5
Construction, repair, and other work cars	1
Snow plows, 8 wheel, 4 motors	1
Freight cars (motor)	1
Electric motors	22

DESCRIPTION OF RAILWAY.

Length of railway, passenger lines	5.33	miles
Length of railway, freight lines	1.995	"
Length of sidings, switches, etc. . . . .	.36	"
Total length, computed as single track	7.685	"

Motive power, all electric.

System of electric motive power used by the company, overhead trolley system, General Electric motors.

This railway is located in Claremont, N. H.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.*

	Number of tracks at crossing.	
	Railroad.	Railway.
With Boston & Maine, Concord & Claremont Division, Pleasant street, Claremont.	2	1
With Boston & Maine, Concord & Claremont Division, Claremont Junction	1	1
Total	3	2

*At all the above crossings frogs are inserted in the tracks.

GENERAL REMARKS AND EXPLANATIONS.

The bonds issued are held by a Boston syndicate, which furnished the money to build the road, and by an understanding with the bondholders, instead of paying the coupons as they became due, the money was used to complete the road, which accounts for the fact that no deduction from net income was made for interest on funded debt.

PROPER ADDRESS OF THE COMPANY.

CLAREMONT RAILWAY & LIGHTING COMPANY.

CLAREMONT, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Hira R. Beckwith, Claremont, N. H.; vice-president, John T. Emerson, Claremont, N. H.; treasurer, L. N. Wheelock, Claremont, N. H.; auditor, Oscar B. Rand, Claremont, N. H.; clerk of corporation, E. B. Heywood, Claremont, N. H.; general counsel, F. H. Brown, Claremont, N. H.; general manager, L. N. Wheelock, Claremont, N. H.; superintendent, Theodore MacConnell, Claremont, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Hira R. Beckwith, John T. Emerson, Ira F. Chandler, Frank H. Foster, Oscar B. Rand, L. N. Wheelock, Claremont, N. H.; M. F. Dickinson, 53 State street, Boston, Mass.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

HIRA R. BECKWITH,
President.

L. N. WHEELLOCK,
Treasurer and General Manager.

THEODORE MACCONNELL,
Superintendent.

STATE OF NEW HAMPSHIRE.

SULLIVAN, ss. September 13, 1904. Then personally appeared the above-named Hira R. Beckwith, L. N. Wheelock, and Theodore MacConnell and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

J. T. EMERSON,
Justice of the Peace.

REPORT

OF THE

CONCORD STREET RAILWAY

FOR THE FIVE MONTHS ENDING NOVEMBER 30, 1903.

GENERAL EXHIBIT FOR THE FIVE MONTHS.	
Gross income from operation	\$41,694.92
Operating expenses	30,657.44
Net income from operation	\$11,037.48
Charges upon income accrued during the five months:	
Interest on funded debt	\$2,388.19
Interest and discount on unfunded debts and loans	16.67
Taxes (5-12 annual charge)	509.61
Total charges and deductions from income	\$2,914.47
Surplus for five months ending November 30, 1903	\$8,123.01
Amount of surplus June 30, 1903	13,647.32
Total	\$21,770.33
Deductions during the five months:	
Bill receivable, charged off	48.31
Total surplus June 30, 1903	\$21,722.02
EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$39,819.30
Receipts from rentals of buildings and other property	339.50
Receipts from advertising in cars	125.00
Receipts from park	1,411.12
Gross income from operation	\$41,694.92

EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers and clerks . . .	\$1,861.25
General office expenses and supplies . . .	307.27
Insurance	264.17
Miscellaneous	443.24
Maintenance of park and entertainments . .	4,907.08
Maintenance of roadway and buildings:	
Repairs of roadbed and track	1,101.57
Repairs of electric line construction . . .	413.70
Repairs of buildings	88.15
Maintenance of equipment:	
Repairs of cars and other vehicles	2,350.84
Repairs of electric equipment of cars . . .	895.76
Harnesses, horse-shoeing, and veterinary care .	418.19
Transportation expenses:	
Cost of electric motive power (fuel, water, power plant, wages, and repairs)	6,174.11
Wages and compensation of persons employed in conducting transportation	9,961.31
Damages for injuries to persons and property .	422.51
Car service	533.70
Rentals of buildings and other property (station expenses)	433.76
Oil and waste	55.11
Miscellaneous car expenses	25.72
Total operating expenses	\$30,657.44

GENERAL BALANCE SHEET.	
<i>Assets.</i>	
Road-bed and tracks and electric line construction, including poles, wiring, feeder lines, etc., salaries, engineering, and other expenses incident to construction	\$98,192.70
Cars and other rolling stock and vehicles, electric equipment of same, horses, etc.	112,143.58
Land necessary for operation of railway, electric power stations, including equipment, and other buildings necessary for operation of railway	30,636.09
Total permanent investments	\$240,972.37

Cash and current assets:		
Cash	\$9,131.52	
Bills and accounts receivable	3,049.68	
Contoocook River Navigation and Improvement Co.	3,431.07	
Total cash and current assets		\$15,612.27
Materials and supplies		137.38
Total		\$256,722.02
<i>Liabilities.</i>		
Capital stock, common	\$50,000.00	
Capital stock, preferred	50,000.00	
Total capital stock		\$100,000.00
Funded debt		116,000.00
Loans and bills payable		19,000.00
Profit and loss balance—surplus		21,722.02
Total		\$256,722.02

CAPITAL STOCK.

Capital stock authorized by law, common	\$100,000.00	
Capital stock authorized by law, preferred	50,000.00	
Total amount authorized by law		\$150,000.00
Capital stock authorized by votes of company, common	\$50,000.00	
Capital stock authorized by votes of company, preferred	50,000.00	
Total amount authorized by vote		\$100,000.00
Capital stock issued and outstanding, common	\$50,000.00	
Capital stock issued and outstanding, preferred	50,000.00	
Total capital stock outstanding		\$100,000.00
Number of shares issued and outstanding, common	500	
Number of shares issued and outstanding, preferred	500	
Total number of shares outstanding		1,000

Number of stockholders, common	1	
Number of stockholders, preferred	1	
Total number of stockholders		2
Number of stockholders in New Hampshire, common	1	
Number of stockholders in New Hampshire, preferred	1	
Total stockholders in New Hampshire		2
Amount of stock held in New Hampshire, common	\$50,000.00	
Amount of stock held in New Hampshire, preferred	50,000.00	
Total stock held in New Hampshire		\$100,000.00
All stock owned by the Concord & Montreal Railroad.		
FUNDED DEBT.		
First mortgage bonds:		
Rate of interest	5 per cent	
Date of maturity	1913	
Amount outstanding	\$116,000.00	
Interest paid to December 1, 1903	2,388.19	
Under provision contained in these bonds, they were called December 1, 1903, and redeemed at par and accrued interest.		
VOLUME OF TRAFFIC, ETC.		
Number of passengers carried during five months	779,238	
Number of passengers carried per mile of railway track operated	67,118	
Number of round trips run	32,524	
Number of car miles run	210,745	
Average number of persons employed	76	
EQUIPMENT OWNED.		
Box passenger cars equipped for electric power	12	
Open passenger cars (trail cars)	6	
Open passenger cars for electric power	11	
Total		17
Number of all above cars with 4 wheels		29
Number of all above cars with 8 wheels		15
		14

Construction, repair, and other work cars	2
Snow plows	2
Steam motor	1
Carts and snow sleds (2 carts, 4 sleds)	6
1 express wagon, 1 tower wagon	2
Horses	4
Harnesses, double, 4; single, 1; total	5
Electric motors	42

DESCRIPTION OF RAILWAY.

Length of railway owned and operated	11.61 miles
Length of sidings, switches, etc., owned and operated	1.1 "
Total length, computed as single track	12.71 "

Motive power, all electric.

System of electric motive power used by the company, General Electric and Westinghouse.

This railway is located in Concord.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.	Number of tracks at crossing.	
	Railroad.	Railway.
With Boston & Maine Railroad, West Concord.....	1	1
Total	1	1

GENERAL REMARKS AND EXPLANATIONS.

By decree of the superior court the Concord Street Railway corporation was dissolved as of December 1, 1903, the road, franchise, and property of the Concord Street Railway, also all the park property, the steamboats, and rights of the Contoocook River Navigation and Improvement Company, all being now a part of the Concord & Montreal Railroad.

As authorized by legislature of New Hampshire, January 29, 1903.

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers..	1	.....	1
Employees..	1	.....	1
Others.....
Total....	2	.....	2

STATEMENT OF EACH ACCIDENT.

September 17, 1903. James J. Crowley, passenger, fell from moving car and was severely injured.

September 25, 1903. Bert Ferrin, lineman, fell from pole, receiving injuries about head.

PROPER ADDRESS OF THE COMPANY.

THE CONCORD STREET RAILWAY,
CONCORD, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Lucius Tuttle, Boston, Mass.; treasurer, John F. Webster, Concord, N. H.; general auditor, Fred S. Heath, Concord, N. H.; clerk of corporation and general counsel, John M. Mitchell, Concord, N. H.; superintendent, Henry A. Albin, Concord, N. H.; general passenger agent, Frank E. Brown, Concord, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

Lucius Tuttle, Boston, Mass.; Benjamin A. Kimball, Concord, N. H.; Samuel C. Lawrence, Medford, Mass.; Charles E. Morrison, Henry R. Reed, Boston, Mass.; Alvah W. Sulloway, Franklin, N. H.; Hiram A. Tuttle, Pittsfield, N. H.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

B. A. KIMBALL,
For President.

JOHN F. WEBSTER,
Treasurer.

FRED S. HEATH,
General Auditor.

STATE OF NEW HAMPSHIRE.

MERRIMACK, ss. Concord, October, 1904. Then personally appeared the above-named Benjamin A. Kimball, John F. Webster, and Fred S. Heath, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

GEORGE E. CUMMINGS,
Justice of the Peace.

REPORT

OF THE

DOVER, SOMERSWORTH & ROCHESTER STREET RAILWAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

[Leased to and operated by Exeter, Hampton & Amesbury Street
Railway Company.]

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$82,099.42
Operating expenses	61,096.90
Net income from operation	\$21,002.52
Miscellaneous income, less expense of collecting:	
Rents, buildings	\$509.38
Sales of old material	461.10
Total income from other sources than operation	970.48
Gross income above operating expenses	\$21,973.00
Charges upon income accrued during the year:	
Taxes	\$2,774.13
Rentals of leased railways	33,000.00
Loss in operation, Central Park	1,837.51
Total charges and deductions from income	37,611.64
Deficit for year ending June 30, 1904	\$15,638.64
Amount of deficit June 30, 1903	33,326.44
Total deficit June 30, 1904	\$48,965.08
Total income from lease of railway	\$33,000.00
Interest on funded debt	15,000.00
Surplus for the year ending June 30, 1904	\$18,000.00

Amount of surplus June 30, 1903, on account of lease	\$27,000.00
Accrued prior to lease	9,242.51
Total surplus June 30, 1904	\$54,242.51
EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$18,890.26
Receipts from advertising in cars	209.16
Gross income from operation	\$82,099.42
EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers and clerks	\$2,583.22
General office expenses and supplies	856.38
Insurance	1,752.21
Advertising \$547.54	
Miscellaneous 470.52	
	1,018.06
Maintenance of roadway and buildings:	
Repairs of roadbed and track	2,389.94
Repairs of electric line construction	1,418.02
Removal of snow and ice	1,842.68
Repairs of buildings	118.71
Maintenance of equipment:	
Repairs of cars and other vehicles and electric equipment	4,528.15
Transportation expenses:	
Cost of electric motive power	18,798.16
Wages and compensation of persons employed in conducting transportation	21,523.16
Damages for injuries to persons and property	2,869.57
Rentals of buildings and other property	118.09
Supplies and miscellaneous expenses	1,280.55
Total operating expenses	\$61,096.90
PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING YEAR.	
(Completion of work begun previous year)	\$770.32
Duplicate cable across Great Bay and completion as above	6,360.02
Total additions to railway	\$7,130.34

Electrical equipment of same	\$321.65
Additional land necessary for operation of railway, new electric power machinery, etc., additional equipment of power stations, other new buildings necessary for operation of railway	3,198.56
Engineering and superintendence	175.65
Total additions to property accounts	\$10,826.20

GENERAL BALANCE SHEET.

Assets.

Railway:	
Roadbed and tracks	\$232,728.46
Electric line construction, including poles, wiring, feeder lines, etc.	138,732.13
Salaries, engineering, and other expenses incident to construction	9,356.65
Total cost of railway owned	\$380,817.24
Cars and other rolling stock and vehicles and electric equipment of same	110,859.06
Land necessary for operation of railway, electric power stations, including equipment, other buildings necessary for operation of railway	229,804.36
Office furniture	83.21
Total permanent investments	\$721,563.87
Bills and accounts receivable	55,000.00
Total	\$776,563.87

Liabilities.

Capital stock, common	\$300,000.00
Funded debt	300,000.00
Loans and bills payable	112,321.36
Matured interest coupons unpaid (including coupons due July 1)	10,000.00
Profit and loss balance—surplus	54,242.51
Total	\$776,563.87

CAPITAL STOCK.

Capital stock authorized by law, common	\$300,000.00
Capital stock authorized by votes of company, common	300,000.00
Capital stock issued and outstanding, common . .	300,000.00

Number of shares issued and outstanding, common	3,000
Number of stockholders, common	6
Number of stockholders in New Hampshire, common	2
Amount of stock held in New Hampshire, common	\$299,600.00

FUNDED DEBT.

First mortgage gold bonds:	
Rate of interest	5 per cent.
Date of maturity	July 1, 1921
Amount outstanding	\$300,000.00
Interest paid during year	5,000.00

VOLUME OF TRAFFIC, ETC.

Number of passengers carried during the year	1,757,515
Number of passengers carried per mile of railway track operated	103,353
Number of round trips run	11,846
Number of car miles run	402,900
Average number of persons employed	50

EQUIPMENT OWNED.

Box passenger cars equipped for duplex electric power	2
Box passenger cars equipped for electric power	19
Open passenger cars equipped for electric power	15
Total passenger cars of all kinds	36
Number of all above cars with 4 wheels	16
Number of all above cars with 6 wheels	2
Number of all above cars with 8 wheels	18
Number of electric cars equipped with fenders	18
Construction, repair, and other work cars	2
Snow plows	2
Sleighs	2
Electric motors	68

DESCRIPTION OF RAILWAY.

Length of railway owned and operated	17.005 miles
Length of sidings, switches, etc., owned and operated . . . . .	.739 "
Total length, computed as single track	17.744 miles

Motive power, all electric.

System of electric motive power used by the company, Westinghouse and General Electric.

This railway is located in Dover, Somersworth, Rochester, and Gonic.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.*	Number of tracks at crossing.	
	Railroad.	Railway.
With B. & M. R. R., W. N. & P. Division, Main Street, Rochester	1	.....
With B. & M. R. R., Northern Division, Railroad Ave., Rochester	2	.....
With B. & M. R. R., Eastern Division, Central Ave., Dover	1	.....
With B. & M. R. R., Eastern Division, Washington Street, Dover	1	.....
With B. & M. R. R., Western Division, Central Ave., Dover	3	.....
Total number of tracks at crossings	8	.....

* Number of above crossings at which frogs are inserted in the tracks, 8.

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers	5	.....	4	.....	9
Employees
Other persons	1	1	2	1	3
Total	6	1	6	1	12

 STATEMENT OF EACH ACCIDENT.

July 7, 1903. Woman had fainting spell, fell against conductor, and hit her head on trolley catcher. Bruise on head.

August 12, 1903. Woman, in alighting from car, caught her foot or slipped, falling to ground. Slightly shaken up.

August 14, 1903. Cow on track, struck by car and killed.

September 12, 1903. Woman boarding car either had fainting spell or slipped, and fell to the ground. Slightly shaken up.

September 22, 1903. Moving piano at Central Park, Dover. Man holding piano on team was in some way caught between wire and piano. Killed instantly.

September 25, 1903. Woman fell alighting from car in motion. Back wrenched.

October 22, 1903. Car slid backward going up hill (rails slippery). Man tried to jump off and fell. Shoulder dislocated.

November 3, 1903. Man and children in team driving alongside of car. Dog ran under horse's feet; horse jumped, throwing occupants out. Children not hurt. Man's shoulder dislocated.

November 18, 1903. Car left rails, striking a pole. Three persons injured.

January 2, 1904. Horse crossed track in front of car at rapid gait, collided with car, damaging sleigh and hurting occupants slightly.

January 26, 1904. Horse, hauling pair of work sleds, crossed track in front of car; struck by car. Horse's leg broken. Had to be killed.

March 23, 1904. Blind woman, with attendant, stood too near car, waiting for it to pass. Blind woman struck by car, knocked down and injured. Ankle sprained and forehead bruised.

June 25, 1904. Man boarded car and was still standing, when car started, throwing him against seat. Arm hurt.

 PROPER ADDRESS OF THE COMPANY.

DOVER, SOMERSWORTH & ROCHESTER STREET RAILWAY
COMPANY,

HAMPTON, N. H.

 NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, D. A. Belden, 50 Merrimac street, Haverhill, Mass.; vice-president, F. P. Royce, 159 Devonshire street, Boston, Mass.; treasurer and auditor, Samuel P. Russell, 50 Merrimac street, Haverhill, Mass.; clerk of corporation, Samuel W. Emery, Portsmouth, N. H.; general counsel, Samuel W. Emery, Portsmouth, N. H.; general manager, Franklin Woodman, Haverhill, Mass.; superintendent, A. B. Leighton, Dover, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

D. A. Belden, Haverhill, Mass.; F. P. Royce, Boston, Mass.;
S. W. Emery, Portsmouth, N. H.; F. W. Stearns, Newton, Mass.;
R. H. Johnson, Braintree, Mass.

We hereby certify that the statements contained in the foregoing report are full, just and true.

D. A. BELDEN,

President.

SAMUEL P. RUSSELL,

Treasurer.

FRANKLIN WOODMAN,

General Manager.

COMMONWEALTH OF MASSACHUSETTS.

ESSEX, ss. November, 1904. Then personally appeared the above-named David A. Belden, Samuel P. Russell, Franklin Woodman, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

EDMUND B. FULLER,

Justice of the Peace.

REPORT

OF THE

EXETER, HAMPTON & AMESBURY STREET RAILWAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904

GENERAL EXHIBIT FOR THE YEAR.

Gross income from operation	\$47,296.07
Operating expenses	43,878.65
Net income from operation	\$3,417.42
Charges upon income accrued during the year:	
Interest on funded debt \$11,250.00	
Taxes, estimated 978.66	
Loss Hampton Beach 1,399.28	
Total charges and deductions from income	13,627.94
Net loss	\$10,210.52
Amount of deficit June 30, 1903	21,134.30
Total deficit June 30, 1904	\$31,344.82

EARNINGS FROM OPERATION.

Receipts from passengers carried	\$42,206.04
Receipts from carriage of mails	1,983.81
Receipts from carriage of freight and express	150.95
Receipts from rentals of buildings and other property	72.50
Receipts from advertising in cars	132.66
Receipts from interest on deposits	91.02
Sale of old material	2,659.09
Gross income from operation	\$47,296.07

EXPENSES OF OPERATION.		
General expenses:		
Salaries of general officers and clerks		\$1,656.83
General office expenses and supplies		548.91
Insurance		1,141.56
Miscellaneous expenses		302.31
Advertising		369.22
Maintenance of roadway and buildings:		
Repairs of roadbed and track		1,958.51
Repairs of electric line construction		980.73
Removal of snow and ice		2,015.81
Repairs of buildings		280.60
Maintenance of equipment:		
Repairs of cars and other vehicles and repairs of electric equipment		5,480.32
Transportation expenses:		
Cost of electric motive power		12,677.31
Wages and compensation of persons employed in conducting transportation		12,508.94
Damages for injuries to persons and property		1,557.68
Tolls for trackage rights over other railways		83.90
Rentals of buildings and other property		72.93
Car service, supplies and expenses		1,406.11
Cleaning and sanding track		836.98
Total operating expenses		\$43,878.65
PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING YEAR.		
Additions:		
Extension of railway and tracks	\$533.00	
New electric line construction	11,791.40	
Total additions to railway		\$12,324.40
Additions to other permanent property:		
Engineering and superintendent	\$442.90	
Furniture and fixtures	981.29	
Shop tools	183.83	
Hampton Beach improvements	3,005.74	
Total additions to other permanent property		4,613.76
Total additions to property accounts		\$16,938.16

Deductions:

Cars and equipments sold	\$4,198.70	
Power plant machinery sold	19,164.25	
Total deductions from property accounts		\$23,362.95
Net deduction from property accounts for the year		\$6,424.79

GENERAL BALANCE SHEET.

*Assets.***Railway:**

Roadbed and tracks	\$198,694.71	
Electric line construction, including poles, wiring, feeder lines, etc.	117,670.72	
Interest accrued during construction of railway	16,875.00	
Salaries, engineering, and other expenses incident to construction	15,420.10	
Total cost of railway owned		\$348,660.53

Equipment:

Cars and other rolling stock and vehicles	\$28,229.16	
Electric equipment of same	27,692.87	
Total cost of equipment owned		55,922.03

Cost of lands and buildings owned		125,889.21
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Other permanent property:

Hampton Beach improvements	\$62,250.64	
Furniture and fixtures	1,706.00	
Shop tools	1,548.96	
Total cost of other permanent property owned		65,505.60

Total permanent investments		\$595,977.37
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Cash and current assets:

Cash	\$8,919.24	
Bills and accounts receivable	33,501.38	
Unexpired insurance	1,800.00	
Notes receivable	600.00	
Total cash and current assets		\$44,820.62

Materials and supplies	\$10,046.35
June 30, 1903, loss operating leased roads	78,882.65
June 30, 1904, loss for year, leased roads	72,704.19
Profit and loss balance—deficit	31,344.82
Total	\$833,776.00
<i>Liabilities.</i>	
Capital stock, common	\$275,000.00
Funded debt	225,000.00
Current liabilities:	
Loans and bills payable	\$175,870.38
Rentals leased roads:	
Matured interest coupons unpaid	31,000.00
Rentals due July 1	112,800.00
Rental accrued, Hampton Bridge	6,395.16
Total current liabilities	\$326,065.54
Accrued liabilities:	
Interest accrued and not yet due	\$937.50
Taxes accrued and not yet due	6,772.96
Total accrued liabilities	7,710.46
Total	\$833,776.00
CAPITAL STOCK.	
Capital stock authorized by law, common	\$275,000.00
Capital stock authorized by votes of company, common	275,000.00
Capital stock issued and outstanding, common	275,000.00
Number of shares issued and outstanding, common	2,750
Number of stockholders, common	6
Number of stockholders in New Hampshire, common	2
Amount of stock held in New Hampshire, common	\$274,600.00
FUNDED DEBT.	
First mortgage 20-year gold bonds:	
Rate of interest	5 per cent.
Date of maturity	June, 1910
Amount outstanding	\$225,000.00
Interest paid during year	11,250.00

VOLUME OF TRAFFIC, ETC.	
Number of passengers carried during the year	875,794
Number of passengers carried per mile of railway track operated	42,266
Number of round trips run	6,490
Number of car miles run	265,600
Average number of persons employed	35

EQUIPMENT OWNED.	
Box passenger cars equipped for electric power	3
Open passenger cars equipped for electric power	9
Total passenger cars of all kinds	12
Number of all above cars with 4 wheels	4
Number of all above cars with 8 wheels	8
Number of electric cars equipped with fenders	12
Construction, repair, and other work cars	8
Snow plows	3
Electric motors	24

DESCRIPTION OF RAILWAY.	
Length of railway line owned and operated	20.721 miles
Length of sidings, switches, etc., owned and operated . . . . .	.885 "
Total length, computed as single track	21.606 miles

Motive power all electric.

System of electric motive power used by the company, Westinghouse and General Electric.

This railway is located in Exeter, Hampton, and Hampton Beach.

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.....	1	.....	1	.....	2
Employees.....
Others	3	.....	3
Total.....	1	.....	4	.....	5

STATEMENT OF EACH ACCIDENT.

July 3, 1903. Team too near car, struck and damaged quite badly. Driver received scalp wounds. Not serious.

July 9, 1903. Man sitting on curb with legs on track struck by car, tearing trousers and scratching leg. Intoxicated.

August 3, 1903. Man was leading one horse and driving another. Former pulled back as car passed, pulling the man and straining his shoulder.

October 18, 1903. Car left rails. One woman claimed to be injured. Five other passengers on car.

May 30, 1904. Man, walking on running-board, fell off car. Leg hurt.

PROPER ADDRESS OF THE COMPANY.

EXETER, HAMPTON & AMESBURY STREET RAILWAY
COMPANY.

HAMPTON, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, D. A. Belden, 50 Merrimac street, Haverhill, Mass.; vice-president, F. P. Royce, 159 Devonshire street, Boston, Mass.; treasurer and auditor, Samuel P. Russell, 50 Merrimac street, Haverhill, Mass.; clerk of corporation and general counsel, S. W. Emery, Portsmouth, N. H.; general manager, Franklin Woodman, 50 Merrimac street, Haverhill, Mass.; superintendent, Clarence P. Hayden, Hampton, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

D. A. Belden, Haverhill, Mass.; F. P. Royce, Dedham, Mass.;
S. W. Emery, Portsmouth, N. H.; F. W. Stearns, Newton, Mass.;
R. H. Johnson, Braintree, Mass.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

D. A. BELDEN,

President.

SAMUEL P. RUSSELL,

Treasurer.

FRANKLIN WOODMAN,

General Manager.

COMMONWEALTH OF MASSACHUSETTS.

ESSEX, ss. November, 1904. Then personally appeared the above-named D. A. Belden, Samuel P. Russell, Franklin Woodman, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

EDMUND B. FULLER,

Justice of the Peace.

REPORT

OF THE

HAVERHILL, PLAISTOW & NEWTON STREET RAILWAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

[Leased to and operated by Exeter, Hampton & Amesbury Street
Railway Company.]

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$31,325.90
Operating expenses	32,875.88
Gross loss above operating expenses	\$1,549.98
Charges upon income accrued during the year:	
Taxes, estimated	\$60.00
Rentals of leased railways	16,850.00
Total charges and deductions from income	16,910.00
Deficit for year ending June 30, 1904	\$18,459.98
Amount of deficit June 30, 1903	2,178.74
Total deficit June 30, 1904	\$20,638.72
Total income from lease of railway	\$16,850.00
Interest on funded debt	7,250.00
Surplus for the year ending June 30, 1904	\$9,600.00
Amount of surplus June 30, 1903	13,800.00
Total surplus June 30, 1904	\$23,400.00

EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$31,196.79
Receipts from advertising in cars	102.11
Sale of old material	27.00
Gross income from operation	\$31,325.90
EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers and clerks . .	\$1,240.49
General office expenses and supplies . .	410.97
Insurance	854.70
Miscellaneous	226.34
Advertising	276.44
Maintenance of roadway and buildings:	
Repairs of roadbed and track	1,466.33
Repairs of electric line construction . .	734.28
Removal of snow and ice	1,509.23
Repairs of buildings	210.08
Repairs of cars and other vehicles and electric equipment of cars	4,103.13
Transportation expenses:	
Cost of electric motive power	9,491.50
Wages and compensation of persons employed in conducting transportation	9,365.47
Damages for injuries to persons and property	1,166.25
Tolls for trackage rights over other railways	48.50
Rentals of buildings and other property	54.60
Car service, supplies and expenses	\$1,090.92
Cleaning and sanding track	626.65
	1,717.57
Total operating expenses	\$32,875.88
PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING YEAR.	
Additions:	
Extension of railway and tracks	\$1,062.30
New electric line construction	1,622.98
Total additions to railway	\$2,685.28
Additional cars and electrical equipment of same	1,824.69

Additional land necessary for operation of railway, new electric power stations, including machinery, etc., and additional equipment of power stations		\$5,489.82
Engineering, superintendence, and shop tools		184.69
Net additions to property accounts for the year		<u>\$10,184.48</u>
GENERAL BALANCE SHEET.		
<i>Assets.</i>		
Railway:		
Roadbed and tracks	\$107,417.87	
Electric line construction, including poles, wiring, feeder lines, etc.	42,748.83	
Salaries, engineering, and other expenses incident to construction	9,132.73	
Total cost of railway owned		<u>\$159,299.43</u>
Cars and other rolling stock and vehicles and electrical equipment of same		98,867.03
Land and buildings:		
Land necessary for operation of railway, electric power stations, including equipment, and and other buildings necessary for operation		120,519.55
Other permanent property:		
Tools, office furniture, and fixtures		242.43
Total permanent investments		<u>\$378,928.44</u>
Bills and accounts receivable		30,650.00
Total		<u>\$409,578.44</u>
<i>Liabilities.</i>		
Capital stock, common		\$160,000.00
Funded debt		145,000.00
Current liabilities:		
Loans and bills payable	\$73,928.44	
Matured interest coupons unpaid (Including coupons due July 1)	7,250.00	
Total current liabilities		<u>81,178.44</u>
Profit and loss balance—surplus		\$23,400.00
Total		<u>\$409,578.44</u>

CAPITAL STOCK.

Capital stock authorized by law, common . . .	\$160,000.00
Capital stock authorized by votes of company, common	160,000.00
Capital stock issued and outstanding, common	160,000.00
Number of shares issued and outstanding, common	1,600
Number of stockholders, common	6
Number of stockholders in New Hampshire, common	2
Amount stock held in New Hampshire, common	\$159,600.00

FUNDED DEBT.

First mortgage, gold bonds:	
Rate of interest	5 per cent
Date of maturity	July 1, 1921
Amount outstanding	\$145,000.00

VOLUME OF TRAFFIC, ETC.

Number of passengers carried during the year	628,708
Number of passengers carried per mile of railway track operated	77,095
Number of round trips run	11,944
Number of car miles run	194,800
Average number of persons employed	20

EQUIPMENT OWNED.

Box passenger cars equipped for electric power	7
Open passenger cars equipped for electric power	6
Total passenger cars of all kinds	13
Number of all above cars with 8 wheels	13
Number of electric cars equipped with fenders	13
Construction, repair, and other work cars	2
Electric motors	32

DESCRIPTION OF RAILWAY.

Length of railway line owned and operated	8.155 miles
Length of sidings, switches, etc., owned and operated . . . . .	.319 "
Total length, computed as single track	8.474 "

Motive power, all electric.

System of motive electric power used by the company, Westinghouse and General Electric.

This railway is located in Plaistow and Newton.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.	Number of tracks at crossing.	
	Railroad.	Railway.
With Boston & Maine Railroad, Western Division, Main street, Newton	2	.....
Total.....	2	.....

Number of above crossings at which frogs are inserted in the tracks, 2.

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.....	2	.....	2	.....	4
Employees
Other persons...	1	3	1	3
Total.....	2	1	5	1	7

STATEMENT OF EACH ACCIDENT.

July 14, 1903. Intoxicated man tried to board car and was dragged; leg hurt.

August 22, 1903. Woman ran across track in front of car; wrist broken.

September 7, 1903. Man waiting for a car too near track; struck by car and leg broken.

November 15, 1903. Switch-bar fell from rear vestibule, where it was placed, onto a man, hurting his leg.

December 23, 1903. Trolley pole came down and struck man on shoulder.

January 14, 1904. Man driving on track; car stopped; tried to get off track but runner caught, throwing driver out and breaking shaft.

March 15, 1904. Man stepped in front of car and was knocked to the ground, receiving some injuries; not serious.

June 3, 1904. Man standing near track in a crouching position, struck by car and killed.

June 12, 1904. Woman with baby fell in alighting from car; woman shaken up; release.

PROPER ADDRESS OF THE COMPANY.

HAVERHILL, PLAISTOW & NEWTON STREET RAILWAY
COMPANY,
HAMPTON, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, D. A. Belden, 50 Merrimac street, Haverhill, Mass.: vice-president, F. P. Royce, 159 Devonshire street, Boston, Mass.: treasurer and auditor, Samuel P. Russell, 50 Merrimac street, Haverhill, Mass.; clerk of corporation and general counsel, S. W. Emery, Portsmouth, N. H.; general manager, Franklin Woodman, 50 Merrimac street, Haverhill, Mass.; superintendent, Clarence P. Hayden, Hampton, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

D. A. Belden, Haverhill, Mass.; F. P. Royce, Dedham, Mass.: S. W. Emery, Portsmouth, N. H.; F. W. Stearns, Newton, Mass.: R. H. Johnson, Braintree, Mass.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

D. A. BELDEN,
President.

SAMUEL P. RUSSELL,
Treasurer.

FRANKLIN WOODMAN,
General Manager.

COMMONWEALTH OF MASSACHUSETTS.

ESSEX, ss. November, 1904. Then personally appeared the above-named D. A. Belden, Samuel P. Russell, Franklin Woodman, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

EDMUND B. FULLER,
Justice of the Peace.

REPORT

OF THE

HUDSON, PELHAM & SALEM ELECTRIC RAILWAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$83,905.69
Operating expenses	88,811.41
Net loss from operation	\$4,905.72
Interest on funded debt	18,250.00
Deficit for year ending June 30, 1904 . .	\$23,155.72
Amount of deficit June 30, 1903	25,880.39
Deficit in accident account	63,227.71
Total deficit June 30, 1904	\$112,263.82
EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$82,846.33
Receipts from advertising in cars	285.69
Receipts from interest on deposits	77.70
Sale of old material	695.97
Gross income from operation	\$83,905.69
EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers and clerks . .	\$3,714.53
General office expenses and supplies . .	1,240.09
Insurance	1,736.34
Other general expenses	724.07
Advertising	802.90

Maintenance of roadway and buildings:		
Repairs of roadbed and track		\$2,751.85
Repairs of electric line construction		1,396.12
Removal of snow and ice		1,533.65
Repairs of buildings		177.16
Maintenance of equipment:		
Repairs of cars and other vehicles and electric equipment of cars		12,234.77
Transportation expenses:		
Cost of electric motive power		27,201.80
Wages and compensation of persons employed in conducting transportation		25,217.43
Damages for injuries to persons and property, amount of reserve (See profit and loss account)		2,912.93
Tolls and transfers		3,693.92
Rentals of buildings and other property		160.10
Car service, supplies and expenses		1,882.56
Cleaning and sanding track		1,431.19
Total operating expenses		\$88,811.41
PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING YEAR.		
Extension of railway and tracks	\$7,969.57	
New electric line construction	2,062.38	
Total additions to railway		\$10,031.95
Additional cars	\$749.48	
Electrical equipment of same	1,209.75	
Other additional equipment	58.74	
Total additions to equipment		2,017.97
Additional land necessary for operation of railway	\$168.67	
Other new buildings necessary for operation of railway	2,081.68	
Total additions to land and buildings		2,250.35
Office furniture and fixtures	\$31.29	
Shop tools and machinery	5,965.05	
Total additions to other permanent property		5,996.34
Total additions to property accounts		\$20,296.61
Engineering		232.46
Net addition to property accounts for the year		\$20,064.15

GENERAL BALANCE SHEET.

*Assets.***Railway:**

Roadbed and tracks	\$337,266.86
Electric line construction, including poles, wiring, feeder lines, etc.	108,483.66
Interest accrued during construction of railway	1,653.57
Salaries, engineering, and other expenses incident to construction	29,530.02

Total cost of railway owned	\$476,934.11
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Equipment:

Cars and other rolling stock and vehicles	\$73,398.58
Electric equipment of same	46,641.87
Other items of equipment	392.87

Total cost of equipment owned	120,433.32
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Land and buildings:

Land necessary for operation of railway	\$22,117.62
Electric power stations, including equipment, and other buildings necessary for operation of railway	228,735.32

Total cost of lands and buildings owned	250,852.94
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Other permanent property:

Office furniture and fixtures	\$734.69
Shop tools and machinery	7,373.81

Total cost of other permanent property owned	8,108.50
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Total permanent investments	\$856,328.87
Bills and accounts receivable	74,653.02
Profit and loss balance—deficit	112,263.82

Total	\$1,043,245.71
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Liabilities.

Capital stock, common	\$375,000.00
Funded debt	365,000.00

Loans and bills payable	\$284,995.71
Matured interest coupons unpaid (including coupons due July 1)	18,250.00
Total	\$1,043,245.71
CAPITAL STOCK.	
Capital stock authorized by law, common	\$375,000.00
Capital stock authorized by votes of company, common	375,000.00
Capital stock issued and outstanding, common	375,000.00
Number of shares issued and outstanding, common	3,750
Number of stockholders, common	6
Number of stockholders in New Hampshire, common	2
Amount of stock held in New Hampshire, common	\$374,600.00
FUNDED DEBT.	
First mortgage, 20-year gold bonds:	
Rate of interest	5 per cent.
Date of maturity	July 1, 1922
Amount outstanding	\$365,000.00
VOLUME OF TRAFFIC, ETC.	
Number of passengers carried during the year	1,714,830
Number of passengers carried per mile of railway track operated	62,448
Number of round trips run	10,233
Number of car miles run	562,000
Average number of persons employed	80
EQUIPMENT OWNED.	
Box passenger cars equipped for electric power	8
Open passenger cars equipped for electric power	15
Total passenger cars of all kinds	23
Number of all above cars with 8 wheels	23
Number of electric cars equipped with fenders	23
Snow plows	4
Electric motors	56

DESCRIPTION OF RAILWAY.

Length of railway line owned and operated . . .	25.738 miles
Length of trackage over other railways . . .	1.190 "
Length of second track owned and operated . . .	1.722 "
Lengths of sidings, switches, etc., owned and operated	1.075 "
Total length, computed as single track	29.725 "

Motive power, all electric.

System of electric motive power used by the company, Westinghouse and General Electric.

This railroad is located in Hudson, Pelham and Salem.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.

Number of tracks at crossing.

	Railroad.	Railway.
With Boston & Maine Railroad, Western Division, Main street, Salem	2	1
Total number of tracks at crossings	2	1

Number of above crossings at which frogs are inserted in the tracks, 2

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers	5	87	.....	2	5	89
Employees	1	3	.....	.....	1	3
Other persons .....	.....	.....	.....	1	.....	1
Total	6	90	.....	3	6	93

STATEMENT OF EACH ACCIDENT.

August 16, 1903. Collision between car and team. Man's head cut and side bruised. Not serious.

September 6, 1903. Collision between two cars. Six killed, eighty-nine injured.

April 2, 1904. Man moving duplex falls; hook unfastened and fell on his foot, crushing the bones of the toes.

April 25, 1904. Man jumped on moving car, lost his footing, but held on to the handle. Shoulder slightly hurt.

June 8, 1904. As woman was alighting from car, air brake released, throwing her against grab handle and hurting her shoulder.

June 26, 1904. Woman got off car while it was in motion. Rendered unconscious and hurt about the head.

PROPER ADDRESS OF THE COMPANY.

HUDSON, PELHAM & SALEM ELECTRIC RAILWAY
COMPANY,

HAMPTON, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, D. A. Belden, 50 Merrimac street, Haverhill, Mass.; vice-president, F. P. Royce, 159 Devonshire street, Boston, Mass.; treasurer and auditor, Samuel P. Russell, 50 Merrimac street, Haverhill, Mass.; clerk of corporation and general counsel, S. W. Emery, Portsmouth, N. H.; general manager, Franklin Woodman, 50 Merrimac street, Haverhill, Mass.; superintendent, Robert H. Dunbar, Salem, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

D. A. Belden, Haverhill, Mass.; F. P. Royce, Dedham, Mass.; S. W. Emery, Portsmouth, N. H.; F. W. Stearns, Newton, Mass.; R. H. Johnson, Braintree, Mass.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

D. A. BELDEN,

President.

SAMUEL P. RUSSELL,

Treasurer.

FRANKLIN WOODMAN,

General Manager.

COMMONWEALTH OF MASSACHUSETTS.

ESSEX, ss. November, 1904. Then personally appeared the above-named David A. Belden, Samuel P. Russell, Franklin Woodman, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

EDMUND B. FULLER,
Justice of the Peace.

REPORT

OF THE

KEENE ELECTRIC RAILWAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$26,843.94
Operating expenses	23,694.11
Net income from operation	\$3,149.83
Charges upon income accrued during the year:	
Interest on funded debt . . . \$4,000.00	
Interest and discount on unfunded debts and loans . . . 2,893.35	
Taxes 20.97	
Total charges and deductions from income .	6,914.32
Deficit for year ending June 30, 1904 . .	\$3,764.49
Amount of surplus June 30, 1903	55.54
Total deficit June 30, 1904	\$3,708.95
EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$26,511.15
Receipts from carriage of mails	258.60
Receipts from advertising in cars	74.19
Gross income from operation	\$26,843.94
EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers and clerks . .	\$2,538.70
General office expenses and supplies . .	549.09
Legal expenses	22.50
Insurance	565.66
Amusements	355.29

Maintenance of roadway and buildings:	
Repairs of roadbed and track	\$1,599.19
Repairs of electric line construction	112.77
Removal of snow and ice	794.98
Repairs of buildings	57.96
Maintenance of equipment:	
Repairs of cars and other vehicles	812.50
Repairs of electric equipment of cars	315.14
Transportation expenses:	
Cost of electric motive power	8,176.63
Wages and compensation of persons employed in conducting transportation	7,740.45
Damages for injuries to persons and property	53.25
Total operating expenses	\$23,694.11

**PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS
DURING THE YEAR.**

Extension of railway and tracks	\$736.49
New electric line construction	393.36
Engineering, etc.	71.20
Other rolling stock and vehicles	1,101.22
Additional equipment of power stations	187.57
Account Swanzey extension	43,993.65
Total additions to property accounts	\$46,483.49

GENERAL BALANCE SHEET.

Assets.

Railway:	
Roadbed and tracks	\$92,821.64
Electric line construction includ- ing poles, wiring, feeder lines, etc.	18,502.82
Salaries, engineering, and other expenses incident to construc- tion	15,146.45
Total cost of railway owned	\$126,470.91
Cars and other rolling stock and vehicles, and electric equipment of same	31,513.32
Land necessary for operation of railway, elec- tric power stations, including equipment	56,124.90
Account Swanzey extension	60,000.00
Total permanent investments	\$274,109.13

Cash	\$79.96
Materials and supplies	2,033.59
Profit and loss balance—deficit	3,708.95
Total	\$279,931.63
<i>Liabilities.</i>	
Capital stock, common	\$140,000.00
Funded debt	80,000.00
Loans and bills payable	58,461.58
Interest accrued and not yet due	1,470.05
Total	\$279,931.63
CAPITAL STOCK.	
Capital stock authorized by law, common	\$220,000.00
Capital stock authorized by votes of company, common	140,000.00
Capital stock issued and outstanding, common	140,000.00
Number of shares issued and outstanding, common	1,400
Number of stockholders, common	9
Number of stockholders in New Hampshire, common	5
Amount stock held in New Hampshire, common	75,500.00
FUNDED DEBT.	
First mortgage, 20-year gold bonds:	
Rate of interest	5 per cent
Date of maturity	Oct. 1, 1920
Amount outstanding	80,000.00
Interest paid during year	4,000.00
VOLUME OF TRAFFIC, ETC.	
Number of passengers carried during the year	557,029
Number of round trips run	13,820.5
Number of car miles run	175,963
Average number of persons employed	18
EQUIPMENT OWNED.	
Box passenger cars equipped for electric power	4
Open passenger cars equipped for electric power	5
Total passenger cars of all kinds	9

Number of all above cars with 4 wheels	9
Number of electric cars equipped with fenders	9
Construction, repair, and other work cars	2
Snow plows	2
Electric motors	20

DESCRIPTION OF RAILWAY.

Length of railway line owned and operated	8.344 miles
Length of sidings, switches, etc., owned and operated . . . . .	.24 "
Total length, computed as single track	8.584 "

Motive power, all electric.

System of electric motive power used by the company, General Electric.

This railway is located in the city of Keene, and the towns of Marlborough and Swanzey.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.

	Number of tracks at crossing.	
	Railroad.	Railway.
With Boston & Maine Railroad, at Keene	4	1
With Boston & Maine Railroad, at South Keene.	3	1
Total number of tracks at crossings	7	2

Number of above crossings at which frogs are inserted in the tracks, 2.

LIST OF ACCIDENTS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.....				1		1
Employees.....						
Others						
Total.....				1		1

STATEMENT OF EACH ACCIDENT.

September 13, 1903. Man fell from running board and was slightly injured.

PROPER ADDRESS OF THE COMPANY.

THE KEENE ELECTRIC RAILWAY COMPANY,
KEENE, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Daniel R. Cole, Keene, N. H.; treasurer, George E. Whiting, 178 Devonshire Street, Boston, Mass.; auditor, George A. Litchfield, Keene, N. H.; clerk of corporation, Frank H. Whitcomb, Keene, N. H.; general counsel, Charles H. Hersey, Keene, N. H.; general manager, Thomas T. Robinson, 178 Devonshire street, Boston, Mass.; superintendent, John H. Jennings, Keene, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

Daniel R. Cole, George A. Litchfield, John H. Jennings, Keene, N. H.; Charles O. Whitney, Marlborough, N. H.; Frederick N. Tirrell, George E. Whiting, Hyde Park, Mass.; Thomas T. Robinson, Dedham, Mass.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

DANIEL R. COLE,
President.

GEORGE E. WHITING,
Treasurer.

J. H. JENNINGS,
Superintendent.

STATE OF NEW HAMPSHIRE.

CHESHIRE, ss. August 22, 1904. Then personally appeared the above-named Daniel R. Cole and John H. Jennings and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

CHARLES H. HERSEY,
Justice of the Peace.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. Boston, July 30, 1904. Then personally appeared George E. Whiting and made oath that the foregoing certificate by him subscribed is, to the best of his knowledge and belief, true.

Before me,

CHARLES E. STANWOOD,

Justice of the Peace.

REPORT

OF THE

LACONIA STREET RAILWAY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$25,867.10
Operating expenses	19,645.41
Net income from operation	\$6,221.69
Charges upon income accrued during the year:	
Interest on funded debt	\$4,500.00
Interest and discount on unfunded debts and loans	3,264.20
Taxes	588.10
Total charges and deductions from income	8,352.30
Deficit for year ending June 30, 1904	\$2,130.61
Amount of deficit June 30, 1903	6,681.45
Total deficit June 30, 1904	\$8,812.06
EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$25,044.90
Receipts from rentals of buildings and other property	747.20
Receipts from advertising in cars	75.00
Gross income from operation	\$25,867.10
EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers and clerks	\$882.00
General office expenses and supplies	908.85
Insurance	839.60

Maintenance of roadway and buildings:	
Repairs of roadbed and track	\$320.16
Repairs of electric line construction	121.37
Removal of snow and ice	373.21
Repairs of buildings	347.71
Maintenance of equipment:	
Repairs of cars and other vehicles	1,777.96
Repairs of electric equipment of cars	2,232.50
Transportation expenses:	
Cost of electric motive power	6,893.80
Wages and compensation of persons employed in conducting transportation	4,514.26
Damages for injuries to persons and property	35.00
Miscellaneous transportation expenses	253.99
Amusements	145.00
Total operating expenses	\$19,645.41

**PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS
DURING THE YEAR.**

Extension of railway and tracks	\$145.67
New electric line construction	73.71
Additional cars	2,296.38
Other additional rolling stock and vehicles	47.69
Additional equipment of power stations	12.28
Other new buildings necessary for operation of railway	206.46
Office furniture	11.71
Total additions to property accounts	\$3,093.90

GENERAL BALANCE SHEET.

Assets.

Railway:	
Roadbed and tracks	\$113,139.92
Electric line construction includ- ing poles, wiring, feeder lines, etc.	24,200.00
Salaries, engineering, and other expenses incident to construc- tion	3,200.00
Total cost of railway owned	\$140,539.92

Equipment:		
Cars and other rolling stock and vehicles	\$23,100.00	
Electric equipment of same	14,005.00	
Other items of equipment	4,700.00	
Total cost of equipment owned		\$41,805.00
Land and buildings:		
Land necessary for operation of railway	\$1,050.00	
Electric power stations, including equipment	56,000.00	
Other buildings necessary for operation of railway	10,850.00	
Total cost of lands and buildings owned		67,900.00
Tenements		10,600.00
Total permanent investments		\$260,844.92
Cash and current assets:		
Cash	\$361.93	
Bills and accounts receivable	2,578.68	
Total cash and current assets		2,940.61
Materials and supplies		500.00
Profit and loss balance		8,812.06
Total		\$273,097.59
<i>Liabilities.</i>		
Capital stock, common		\$100,000.00
Capital stock, preferred		24,000.00
Funded debt		90,000.00
Loans and bills payable		59,097.59
Total		\$273,097.59
CAPITAL STOCK.		
Capital stock authorized by law, common		\$100,000.00
Capital stock authorized by law, preferred		40,000.00
Capital stock authorized by votes of company, common		100,000.00
Capital stock authorized by votes of company, preferred		40,000.00
Capital stock issued and outstanding, common		100,000.00
Capital stock issued and outstanding, preferred		24,000.00

Number of shares issued and outstanding, common	2,000
Number of shares issued and outstanding, preferred	240
Number of stockholders, common	34
Number of stockholders, preferred	1
Number of stockholders in New Hampshire, common	25
Number of stockholders in New Hampshire, preferred	1
Amount stock held in New Hampshire, common	\$66,650.00
Amount stock held in New Hampshire, preferred	24,000.00

FUNDED DEBT.

First mortgage bonds:	
Rate of interest	5 per cent
Date of maturity	May 1, 1919
Amount outstanding	\$90,000.00
Interest paid during year	4,500.00

VOLUME OF TRAFFIC, ETC.

Number of passengers carried during the year	520,199
Number of passengers carried per mile of railway track operated	65,025
Number of car miles run	152,834
Average number of persons employed	15

EQUIPMENT OWNED.

Box passenger cars equipped for electric power	2
Open passenger cars equipped for electric power	6
Total passenger cars of all kinds	8
Number of all above cars with 4 wheels	4
Number of above cars with 8 wheels	4
Number of electric cars equipped with fenders	8
Snowplows	1
Barges and omnibuses	2
Electric motors	8 set

DESCRIPTION OF RAILWAY.

Length of railway line owned and operated	8.36 miles
Length of sidings, switches, etc. . . . .	.51 "
Total length, computed as single track	8.87 "

Motive power, all electric.

System of electric motive power used by the company, trolley.

This railway is situated in Laconia.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.	Number of tracks at crossing.	
	Railroad.	Railway.
With Boston & Maine Railroad, Lake Shore Branch..	1	1
With Boston & Maine, Lake Shore Branch, siding.....	1	1
Total	2	2

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.. .. .				1		1
Employees.. .. .						
Others				4		4
Total				5		5

STATEMENT OF EACH ACCIDENT.

Lady stepped in front of moving car.

Car collided with baker's wagon; driver slightly injured.

Lady fell in attempting to board car; slightly injured.

Car collided with team; one person injured.

Man stepped in front of moving car; slightly injured.

PROPER ADDRESS OF THE COMPANY.

LACONIA STREET RAILWAY,

LACONIA, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Harry L. Pierce, Leominster, Mass.; treasurer, Edmund Little, Laconia, N. H.; auditor, Edwin C. Lewis, Laconia, N. H.; clerk of corporation, George P. Munsey, Laconia, N. H.; general manager, Harry L. Pierce, Leominster, Mass.; superintendent, Lewis S. Pierce, Laconia, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

Albert G. Folsom, Samuel B. Smith, Charles F. Stone, Edmund Little, Laconia, N. H.; Harry L. Pierce, Leominster, Mass.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

HARRY L. PIERCE,
President.

EDMUND LITTLE,
Treasurer.

LEWIS S. PIERCE,
Superintendent.

STATE OF NEW HAMPSHIRE.

BELKNAP, ss. September 12, 1904. Then personally appeared the above-named Edmund Little and Lewis S. Pierce and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

GEORGE P. MUNSEY,
Justice of the Peace.

COMMONWEALTH OF MASSACHUSETTS.

WORCESTER, ss. September 16, 1904. Then personally appeared Harry L. Pierce and made oath that the foregoing certificate by him subscribed is, to the best of his knowledge and belief, true.

Before me,

EDMUND P. HADLEY,
Justice of the Peace.

REPORT

OF THE

MANCHESTER STREET RAILWAY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$285,827.30
Operating expenses	222,747.55
Net income from operation	\$63,079.75
Charges upon income accrued during the year:	
Interest on funded debt	\$12,500.00
Interest and discount on unfunded debts and loans	1,798.15
Taxes	5,400.00
Total charges and deductions from income	19,698.15
Net divisible income	\$43,381.60
Dividends declared, 6 per cent, on common stock	41,670.00
Surplus for year ending June 30, 1904	\$1,711.60
Amount of surplus June 30, 1903	15,611.53
Surplus for the year	\$17,323.13
Charge off for depreciation	16,000.00
Total surplus June 30, 1904	\$1,323.13
EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$278,635.95
Receipts from advertising in cars	1,560.00
Park receipts	5,631.35
Gross income from operation	\$285,827.30

EXPENSES OF OPERATION.

General expenses:

Salaries of general officers and clerks	\$7,058.37
General office expenses and supplies	9,211.92
Insurance	19,718.36
Park expense	9,621.91

Maintenance of roadway and buildings:

Repairs of roadbed and track	9,374.86
Repairs of electric line construction	5,000.85
Removal of snow and ice	2,651.03
Repairs of buildings	402.54

Maintenance of equipment:

Repairs of cars and other vehicles	12,043.96
Repairs of electric equipment of cars	9,592.40
Oils and greases	1,328.85

Transportation expenses:

Stable expense	1,017.56
Cost of electric motive power	56,280.90
Wages and compensation of persons employed in conducting transportation	63,817.42
Damages for injuries to persons and property	345.65
Rentals of buildings and other property	9,404.62
Other employees	5,876.35

Total operating expenses	\$222,747.55
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PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS
DURING THE YEAR.

Extension of railway and tracks (2,196 feet)	\$8,369.10
New electric line construction (2,196 feet)	358.35
Total additions to railway	\$8,727.45

Additional cars	\$3,018.24
Electrical equipment of same	6,726.54

Total additions to equipment	9,744.78
Additional land necessary for operation of railway	526.96

Total additions to property accounts	\$18,999.19
Charged surplus and credited cars for depreciation	159.52
Charged surplus and credited equipment for depreciation	15,840.48

Total deductions from property accounts	16,000.00
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Net addition to property accounts for year	\$2,999.19
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GENERAL BALANCE SHEET.		
<i>Assets.</i>		
Railway:		
Roadbed and tracks	\$484,467.75	
Electric line construction, including poles, wiring, feeder lines, etc.	103,824.51	
Total cost of railway owned		\$588,292.26
Equipment:		
Cars and other rolling stock and vehicles	\$230,645.47	
Electric equipment of same	92,032.20	
Horses	350.00	
Total cost of equipment owned		323,027.67
Land necessary for operation of railway		94,303.07
Massabesic park		18,315.31
Total permanent investments		\$1,023,938.31
Cash and current assets:		
Cash	\$1,279.23	
Bills and accounts receivable	2,268.06	
Total cash and current assets		3,547.29
Total		\$1,027,485.60
<i>Liabilities.</i>		
Capital stock, common		\$694,500.00
Funded debt		250,000.00
Loans and bills payable		80,013.93
Taxes accrued and not yet due		1,648.54
Profit and loss balance—surplus		1,323.13
Total		\$1,027,485.60
CAPITAL STOCK.		
Capital stock authorized by law, common		\$694,500.00
Capital stock authorized by votes of company, common		694,500.00
Capital stock issued and outstanding, common		694,500.00
Number of shares issued and outstanding, common		6,945
Number of stockholders, common		1
Number of stockholders in New Hampshire, common		1
Amount stock held in New Hampshire, common		\$694,500.00

FUNDED DEBT.	
First mortgage:	
Rate of interest	5 per cent
Date of maturity	Jan. 1, 1915
Amount outstanding	\$250,000.00
Interest paid during year	12,500.00
VOLUME OF TRAFFIC, ETC.	
Number of passengers carried during the year	6,768,336
Number of passengers carried per mile of railway track operated	198,188
Number of round trips run	160,382
Number of car miles run	1,160,982
EQUIPMENT OWNED.	
Box passenger cars equipped for electric power	44
Open passenger cars equipped for electric power	55
Total passenger cars of all kinds	99
Number of all above cars with 4 wheels	45
Number of all above cars with 8 wheels	54
Number of electric cars equipped with fenders	99
Construction, repair, and other work cars	4
Snow plows	7
Electric sweepers	3
Horse plows	2
Horses	3
Harnesses, double, 2; single, 2; total	4
Electric motors	207
2 tower wagons, 1 emergency wagon, 1 sleigh	4
DESCRIPTION OF RAILWAY.	
Length of railway line owned and operated	28.644 miles
Length of second track owned and operated	5.507 "
Length of sidings, switches, etc.	2.471 "
Total length, computed as single track	36.622 "
Motive power, all electric.	
System of electric motive power used by the company, overhead trolley.	
This railway is located in Manchester and Goffstown.	

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.	Number of tracks at crossing.	
	Railroad.	Railway.
With Boston & Maine Railroad at Granite street.....	2	2
“ “ “ “ Turner “	1	1
“ “ “ “ So. Elm “	1	2
“ “ “ “ Wilson “	4	1
“ “ “ “ So. Main “	2	1
“ “ “ “ Print Works.....	1	2
Total number of tracks at crossings	11	9

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers		1		8		9
Employees				1		1
Other persons.....						
Total.....		1		9		10

STATEMENT OF EACH ACCIDENT.

July 13, 1903. Man fell from car, going round curve.

July 1, 1903. Woman stepped from car when in motion and fell.

August 11, 1903. Boy ran in front of car and was struck by fender.

October 3, 1903. Conductor fell off car while collecting fares.

October 13, 1903. Woman stepped from moving car and fell.

January 7, 1904. Car ran into sleigh, the driver being injured and sleigh broken.

January 26, 1904. Sleigh collided with car, throwing man and woman out.

February 28, 1904. Man drove sleigh on fender of stationary car; woman fell out and was injured.

May 2, 1904. Deaf man on bicycle ran into side of car.

May 6, 1904. Man on bicycle ran into car and broke his collar bone.

PROPER ADDRESS OF THE COMPANY.

MANCHESTER STREET RAILWAY,

MANCHESTER, N. H.

TREASURER'S OFFICE, 53 STATE STREET, BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, S. Reed Anthony, Boston, Mass.; treasurer, P. L. Saltonstall, Boston, Mass.; clerk of corporation and general counsel, D. A. Taggart, Manchester, N. H.; general manager, J. Brodie Smith, Manchester, N. H.; superintendent, W. E. Maloney, Manchester, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

S. Reed Anthony, P. L. Saltonstall, Boston, Mass.; D. A. Taggart, Walter M. Parker, J. Brodie Smith, Manchester, N. H.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

S. REED ANTHONY,

President.

PHILIP L. SALTONSTALL,

Treasurer.

J. BRODIE SMITH.

General Manager.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. Boston, August 30, 1904. Then personally appeared the above-named S. Reed Anthony, Philip L. Saltonstall, and J. Brodie Smith and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

DANIEL P. SNOW,

Justice of the Peace.

REPORT

OF THE

MANCHESTER TRACTION, LIGHT & POWER COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Gross earnings from operation	\$297,032.52
Operating expenses	108,220.97
Net earnings from operation	\$188,811.55
Dividends received on stocks owned:	
Manchester Street Railway	41,670.00
Gross income above operating expenses .	\$230,481.55
Charges upon income accrued during the year:	
Interest on funded debt . . . \$70,154.12	
Interest and discount on unfunded debts and loans . . . 4,532.41	
Taxes 7,800.00	
Total charges and deductions from income .	82,486.53
Net divisible income	\$147,995.02
Dividends paid during the year:	
1½ per cent on \$1,961,800, common stock \$29,427.00	
1½ per cent on \$1,994,000, common stock 29,910.00	
1½ per cent on \$2,017,900, common stock 30,268.50	
1½ per cent on \$2,050,000, common stock 30,750.00	
Total dividends paid	120,255.50
Surplus for year ending June 30, 1904 . .	\$27,639.52

Amount of surplus June 30, 1903	\$24,602.74
Premium on capital	40.00
Total credits	\$52,282.26
Debits to profit and loss during the year:	
Discount on \$122,000 bonds ex- changed for \$122,500 bonds of Manchester Street Railway & Union Electric Company	\$5,030.00
Bad accounts charged off	2,037.84
Commission on sale of stock	1,862.35
Charged off for depreciation	25,000.00
Net amount debited to profit and loss	33,930.19
Total surplus June 30, 1904	\$18,352.07

EARNINGS FROM OPERATION.

Commercial lights	\$129,589.22
Municipal lights	46,694.52
Sale of power	104,320.28
Rents	16,428.50
Total gross earnings	\$297,032.52

EXPENSES OF OPERATION.

Repairs outside of construction	\$11,004.54
Repairs of buildings	852.39
Repairs of generating plant	5,689.46
Expense of generating plant (including supplies and wages)	55,857.74
Wages outside	4,948.37
Maintenance of lights	4,287.54
Stable expense	3,090.57
Salaries of officers and clerks	4,700.06
Insurance	3,883.52
Other general expenses	12,060.77
Freight and cartage,	859.00
Accidents and legal expense	987.01
Total operating expenses	\$108,220.97

PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING THE YEAR.	
Plant	\$134,629.12
1,740 shares Manchester Street Railway Co. .	174,000.00
Total additions to property and investment account	\$308,629.12
Sold \$3,000 Manchester Electric Light Co.'s 5's bonds to sinking fund \$3,650.41	
Charged surplus account and cred- ited plant account for depreci- ation 25,000.00	
Total deductions from property and invest- ment account	28,650.41
Net additions to property and investment for year	\$279,978.71
GENERAL BALANCE SHEET.	
<i>Assets.</i>	
Plant	\$2,379,250.74
6,945 shares Manchester Street Railway Co. .	1,174,250.00
Stock of other corporations:	
1,000 shares of the Ben Franklin Electric Co. \$2,500.00	
\$5,000 Manchester Electric Light Co.'s 5's bonds 5,071.68	
Total stock of other corporations	7,571.68
Total property and investment account .	\$3,561,072.42
Cash and current assets:	
Cash \$1,866.43	
Bills and accounts receivable 35,326.23	
Sinking and other special funds 19,576.13	
Notes receivable 48,670.00	
Total cash and current assets	\$105,438.79
Miscellaneous assets:	
Materials and supplies \$56,382.83	
Manchester Street Railway bond account 144,000.00	
Total miscellaneous assets	200,832.82
Total	\$3,867,344.03

<i>Liabilities.</i>	
Capital stock, common	\$2,050,000.00
Funded debt	1,726,500.00
Loans and bills payable	50,794.72
Interest accrued and not yet due	21,697.25
Profit and loss balance—surplus	18,352.07
Total	\$3,867,344.04

CAPITAL STOCK.	
Capital stock authorized by law, common	\$5,000,000.00
Capital stock authorized by votes of company, common	2,050,000.00
Capital stock issued and outstanding, common	2,050,000.00
Number of shares issued and outstanding, common	20,500
Number of stockholders, common	411
Number of stockholders in New Hampshire, common	145
Amount stock held in New Hampshire, common	\$431,400.00

FUNDED DEBT.

DESCRIPTION OF BONDS, ETC.	Rate of interest.	Date of maturity.	Amount outstanding.	Interest paid during year.
Manchester Traction, Light & Power Co., Consolidated 1st Mortgage	5%	Apr. 1, 1921	\$1,470,000.00	\$57,264.12
Manchester Electric Light Co. Consolidated 1st Mortgage	5%	Oct. 1, 1917	250,000.00	12,500.00
Union Electric Co., 1st Mortgage	6%	Apr. 1, 1914	6,500.00	390.00
Total			\$1,726,500.00	\$70,154.12

SINKING FUNDS.	
Amount June 30, 1903, of Manchester Electric Light Co. sinking fund	\$16,173.00
Additions during year to Manchester Electric Light Co. sinking fund	3,403.13
Total sinking funds, June 30, 1904	\$19,576.13

DESCRIPTION OF RAILROADS AND BRANCHES OPERATED BY THIS COMPANY.

NAME OF RAILROAD OR BRANCH.	Main or Branch Line.	Termini of Main or Branch Line.	Length computed as single track.	
			Total.	In New Hampshire.
Manchester Street Railway.	B.	Manchester to Goffstown..	36,622	36,622
“ “ “	“	Manchester to Goff's Falls.		
“ “ “	M.	City lines in Manchester and West Manchester. ...		
Total.....			36,622	36,622

PROPER ADDRESS OF THE COMPANY.

MANCHESTER TRACTION, LIGHT & POWER COMPANY.

MANCHESTER, N. H.

TREASURER'S OFFICE, 53 STATE ST., BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, William A. Tucker, Boston, Mass.; treasurer, S. Reed Anthony, Boston, Mass.; clerk of corporation, David A. Taggart, Manchester, N. H.; general manager, J. Brodie Smith, Manchester, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

William A. Tucker, S. Reed Anthony, George H. Hood, Stillman F. Kelley, Robert H. Hallowell, Boston, Mass.; J. Brodie Smith, Charles M. Floyd, Walter M. Parker, G. Byron Chandler, Roger G. Sullivan, Harry E. Parker, Manchester, N. H.; Billings P. Learned, New London, Conn.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

WILLIAM A. TUCKER,
President.

S. REED ANTHONY,
Treasurer.

J. BRODIE SMITH,
General Manager.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. Boston, August 30, 1904. Then personally appeared the above-named William A. Tucker, S. Reed Anthony, and J. Brodie Smith, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

DAN'L P. SNOW,
Justice of the Peace.

REPORT

OF THE

NASHUA STREET RAILWAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$72,087.31
Operating expenses	52,177.62
Park receipts	199.00
Gross income above operating expenses	\$20,108.69
Charges upon income accrued during the year:	
Interest on funded debt	\$6,000.00
Taxes	2,326.74
Park expense	323.64
Total charges and deductions from income	8,650.38
Net divisible income	\$11,458.31
Total income from lease of railway	\$500.00
Amount of dividends paid under lease directly to stockholders of the Nashua Street Railway by Boston & Northern Street Railway, successor to lessee	18,000.00
Gross income	\$18,500.00
Salaries and maintenance of organization	500.00
Net divisible income	\$18,000.00
Dividends declared, 6 per cent, on capital stock	18,000.00
Surplus for the year ending June 30, 1904	nothing
Amount of surplus June 30, 1903	\$12,625.86
Total surplus June 30, 1904	\$12,625.86

EARNINGS FROM OPERATION.

Receipts from passengers carried	\$69,378.03
Receipts from tolls for use of tracks by other companies	2,709.28
Gross income from operation	\$72,087.31

EXPENSES OF OPERATION.

General expenses:	
Salaries of general officers and clerks	\$519.11
General office expenses and supplies	92.97
Insurance	4,542.52
Advertising and miscellaneous expenses	388.33
Maintenance of roadway and buildings:	
Repairs of roadbed and track	944.16
Repairs of electric line construction	804.37
Removal of snow and ice	1,669.69
Repairs of buildings	261.94
Maintenance of equipment:	
Repairs of cars and other vehicles	1,214.73
Repairs of electric equipment of cars	1,504.17
Harnesses, horse-shoeing, and veterinary care	9.80
Transportation expenses:	
Provender	208.22
Cost of electric motive power	11,950.74
Wages and compensation of persons employed in conducting transportation	26,437.36
Rentals of buildings and other property	389.96
Other transportation expenses:	
Supplies, \$170.75; miscellaneous, \$468.15, cleaning, oiling, and sanding track, \$600.65	1,239.55
Total operating expenses	\$52,177.62

PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING THE YEAR.

New electric line construction (additional feeder)	\$6,066.68
Additional equipment of power stations	7,727.72
Signal system	719.03
Total additions to property accounts	\$14,513.43

GENERAL BALANCE SHEET.

<i>Assets.</i>		
Railway:		
Roadbed and tracks	\$336,654.45	
Electric line construction, including poles, wiring, feeder lines, etc.	41,045.95	
Total cost of railway owned		\$377,700.40
Equipment:		
Cars and other rolling stock and vehicles and electric equipment of same	\$60,229.24	
Horses	100.00	
Other items of equipment	3,113.23	
Total cost of equipment owned		63,442.47
Land and buildings:		
Land and buildings necessary for operation of railway	\$24,566.72	
Electric power stations, including equipment	27,805.37	
Total cost of lands and buildings owned		52,372.09
Other permanent property:		
Park equipment	\$66.54	
Office furniture and fixtures	423.62	
Signal system	1,920.57	
Total cost of other permanent property owned		2,410.73
Total permanent investments		\$495,925.69
Bills and accounts receivable		330.33
Total		\$496,256.02
<i>Liabilities.</i>		
Capital stock, common		\$300,000.00
Funded debt		150,000.00
Current liabilities:		
Loans and bills payable	\$330.33	
Boston & Northern Street Railway lease account	\$10,625.26	

Boston & Northern Street Rail- way property account	\$22,674.57
Total current liabilities	\$33,630.16
Profit and loss balance—surplus	12,625.86
Total	\$496,256.02

CAPITAL STOCK.

Capital stock authorized by law, common	\$325,000.00
Capital stock authorized by votes of company, common	300,000.00
Capital stock issued and outstanding, common	300,000.00
Number of shares issued and outstanding, com- mon	3,000
Number of stockholders, common	138
Number of stockholders in New Hampshire, com- mon	78
Amount stock held in New Hampshire, common	\$133,300.00

FUNDED DEBT.

First mortgage bonds:	
Rate of interest	4 per cent
Date of maturity	Oct. 1, 1931
Amount outstanding	\$150,000.00
Interest paid by lessee.	

EQUIPMENT OWNED.

Box passenger cars equipped for horse power	4	
Box passenger cars equipped for electric power	11	
Total		15
Open passenger cars equipped for horse power	3	
Open passenger cars equipped for electric power	13	
Total		16
Total passenger cars of all kinds		31
Number of all above cars with 4 wheels		26
Number of all above cars with 8 wheels		5
Number of electric cars equipped with fenders		24
Construction, repair, and other work cars		1
Snow plows		9

Carts and snow sleds	4
2 walkaways, 1 line wagon, 1 Concord wagon, 1 tip cart, 1 tower wagon, 1 sleigh, 1 pung, 1 double sweeper	9
Horses	1
Harnesses, double, 1; single, 1; total	2
Electric motors	32

DESCRIPTION OF RAILWAY.	
Length of railway line owned	14.169 miles
Length of second track . . . . .	.730 "
Length of sidings, switches, etc. . . . .	.621 "
Total length, computed as single track	15.520 "

System of electric motive power used by this company, General Electric, overhead trolley.

This railway is located in Hudson and Nashua.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.*	Number of tracks at crossing.	
	Railroad.	Railway.
With B. & M. R. R., W. N. & R. Division, Main Street,	2	1
" " " " Temple "	1	1
" " N. & A. " "	1	1
" " " " Alden "	1	1
" " " " Main "	1	1
" " Keene " "	2	1
" " " " Temple "	2	1
" " Southern " Hollis "	6	1
Total	16	8

* Number of above crossings at which frogs are inserted in the tracks, 8.

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.....				12		12
Employees.....				1		1
Other persons.....				2		2
Totals				15		15

STATEMENT OF EACH ACCIDENT.

Left moving car and fell.
 Child ran in front of car and fell beside track.
 Boarding moving car and fell.
 Woman boarding standing car, stumbled and fell.
 Left moving car and fell.
 Woman left standing car and fell.
 Woman left moving car and fell.
 Man left moving car and fell.
 Woman left moving car and fell.
 Woman left moving car and fell.
 Woman left moving car and fell.
 Collision of car and pedestrian.
 Woman left moving car and fell.
 Lineman fell from pole.
 Woman left moving car and fell.

PROPER ADDRESS OF THE COMPANY.

NASHUA STREET RAILWAY.

NASHUA, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, John A. Fisher, Nashua, N. H.; vice-president, P. F. Sullivan, Boston, Mass.; treasurer, J. H. Goodspeed, Boston, Mass.; auditor, D. Dana Bartlett, Boston, Mass.; clerk of corporation, Jason E. Tolles, Nashua, N. H.; general counsel, George B. French, Nashua, N. H.; general manager, Robert S. Goff, Boston, Mass.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

John A. Fisher, Nashua, N. H.; P. F. Sullivan, Lowell, Mass.; J. H. Goodspeed, Boston, Mass.; George A. Fernald, Winchester, Mass.; Jason E. Tolles, Nashua, N. H.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

JOHN A. FISHER,
President.

J. H. GOODSPEED,
Treasurer.

ROBERT S. GOFF,
General Manager.

STATE OF MASSACHUSETTS.

SUFFOLK, SS. Boston, September 14, 1904. Then personally appeared the above-named John A. Fisher, J. H. Goodspeed, and Robert S. Goff and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

D. DANA BARTLETT,
Justice of the Peace.

REPORT

OF THE

NEW HAMPSHIRE TRACTION COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL EXHIBIT FOR THE YEAR.	
Expense	\$2,490.10
Salaries	11,578.89
Legal expense	2,825.00
Directors and ex-committee fees	720.00
Total expense	\$17,613.99
Interest on loans and deposits	6,506.96
Loss	\$11,107.03
Charges upon income accrued during the year:	
Interest on funded debt	\$298,125.00
Interest and discount on unfunded debts and loans	86,660.91
Total charges and deductions from income	384,785.91
Deficit for year ending June 30, 1904	\$395,892.94
Amount of deficit June 30, 1903	326,597.29
Total deficit, June 30, 1904	\$722,490.23
PROPERTY ACCOUNT.	
Additions to investment account:	
Shares of Lawrence & Methuen Street Railway Co.	\$25,000.00
Stock of other corporations:	
First mortgage bonds, Lawrence & Methuen Street Railway Co.	125,000.00

First mortgage bonds, Haverhill & Southern New Hampshire Street Railway Co.	\$80,000.00	
First mortgage bonds, Lowell & Pelham Street Railway Co.	40,000.00	
Total additions to property and investment account		\$270,000.00

GENERAL BALANCE SHEET.

Assets.

Investment account:

Shares of Exeter, Hampton & Amesbury Street Railway Co.	\$274,500.00
Shares of Seabrook & Hampton Beach Street Railway Co.	54,500.00
Shares of Dover, Somersworth & Rochester Street Railway Co.	299,500.00
Shares of Haverhill & Plaistow Street Railway Co.	29,500.00
Shares of Haverhill, Plaistow & Newton Street Railway Co.	159,500.00
Shares of Portsmouth & Exeter Street Railway Co.	164,500.00
Shares of Lawrence & Methuen Street Railway Co.	149,500.00
Shares of Haverhill & Southern New Hampshire Street Railway Co.	79,500.00
Shares of Lowell & Pelham Street Railway Co.	39,400.00
Shares of Amesbury & Hampton Street Railway Co.	99,500.00
Shares of Hudson, Pelham & Salem Electric Railway Co.	374,500.00

Total street railway stock owned	\$1,724,400.00
--	----------------

Stock of other corporations:

Shares of Rockingham County Light & Power Co.	\$749,300.00
Shares of Granite State Land Co.	249,500.00
Shares of Canobie Lake Co.	249,500.00

Total stock of other corporations	1,248,300.00
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Total property and investment account	\$2,972,700.00
---	----------------

Cash and current assets:		
Cash	\$11,513.27	
Bills and accounts receivable	2,026,727.61	
Total cash and current assets		\$2,038,240.88
Miscellaneous assets:		
Bonds of constituent companies	\$2,075,000.00	
Plant and general investment account	1,962,597.66	
Total miscellaneous assets		4,037,597.66
Profit and loss balance—deficit		722,490.23
Total		\$9,771,028.77
<i>Liabilities.</i>		
Capital stock, common		\$1,000,000.00
Funded debt		6,625,000.00
Current liabilities:		
Loans and bills payable	\$1,418,454.09	
Matured interest coupons unpaid (including coupons due July 1)	36,630.00	
Matured interest coupons funded into certificates of indebtedness	261,495.00	
Total current liabilities		9,341,579.09
Interest accrued and not yet due		49,231.98
Profit and loss, special		380,217.70
Total		\$9,771,028.77

CAPITAL STOCK.

Capital stock, authorized by law, common	\$1,000,000.00
Capital stock authorized by votes of company, common	1,000,000.00
Capital stock issued and outstanding, common	1,000,000.00
Number of shares issued and outstanding, com- mon	10,000
Number of stockholders, common	12
Number of stockholders in New Hampshire, com- mon	1
Amount of stock held in New Hampshire, com- mon	\$100.00

FUNDED DEBT.	
First mortgage:	
Rate of interest	4½ per cent.
Date of maturity	July 1, 1942
Amount outstanding	\$6,625,000.00
Interest paid during year*	261,495.00

PROPER NAME AND ADDRESS OF THE COMPANY.

NEW HAMPSHIRE TRACTION COMPANY.

HAMPTON, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, David A. Belden, 50 Merrimac street, Haverhill, Mass.; vice-president, Frederick P. Royce, 159 Devonshire street, Boston, Mass.; assistant treasurer and auditor, Samuel P. Russell, 50 Merrimac street, Haverhill, Mass.; clerk of corporation, Samuel W. Emery, Portsmouth, N. H.; general manager, Franklin Woodman, 50 Merrimac street, Haverhill, Mass.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

C. F. Ayer, Lowell, Mass.; J. S. Bartlett, Lynn, Mass.; D. A. Belden, Haverhill, Mass.; A. D. Foster, Milton, Mass.; F. P. Royce, Dedham, Mass.; F. W. Stearns, Newton, Mass.; C. H. Tenney, Hartford, Conn.; P. F. Thompson, Orange, N. J.; A. S. Webb, Jr., New York, N. Y.; John Dearborn, Boston, Mass.; J. S. Whitaker, Portsmouth, N. H.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

D. A. BELDEN,

President.

SAMUEL P. RUSSELL,

Assistant Treasurer and Auditor.

FRANKLIN WOODMAN,

General Manager.

* Funded into Certificates of indebtedness.

COMMONWEALTH OF MASSACHUSETTS.

ESSEX, ss. November 16, 1904. Then personally appeared the above-named D. A. Belden, S. P. Russell, and Franklin Woodman, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

CHARLES H. POOR,
Notary Public.

REPORT

OF THE

PORTSMOUTH, DOVER & YORK STREET RAILWAY

FOR THE YEAR ENDING JUNE 30, 1904.

[A consolidation July 1, 1903, of the Portsmouth, Dover & York Street Railway (formerly the Berwick, Eliot & York Street Railway) and the Kittery & Eliot Street Railway. On November 1, 1903, the Portsmouth, Kittery & York Street Railway was merged into the combined company.]

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$101,027.58
Operating expenses	69,093.51
Net income from operation	\$31,934.07
Charges upon income accrued during the year:	
Interest on funded debt	\$22,625.00
Interest and discount on unfunded debts and loans	1,000.00
Taxes	1,220.48
Total charges and deductions from income	24,845.48
Surplus for year ending June 30, 1904	\$7,088.59
Amount of surplus from Portsmouth, Kittery & York Street Railway, October 31, 1903	26,997.46
Total surplus June 30, 1904	\$34,086.05
EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$87,350.95
Receipts from carriage of mails	1,344.30
Receipts from carriage of freight and express	825.00
Receipts from rentals of buildings and other property	264.00

Receipts from advertising in cars	\$266.67
Tolls from Eliot Bridge account	303.29
Receipts from ferry	10,673.37
Gross income from operation	\$101,027.58

EARNINGS FROM OPERATION.

General expenses:	
Salaries of general officers and clerks	\$2,298.26
General office expenses and supplies	138.44
Insurance	1,979.83
Advertising, telephone service, mail and express, lights, traveling expenses, etc. . . .	2,697.07
Maintenance of roadway and buildings:	
Repairs of roadbed and track, \$1,102.91; repairs bridges, \$170.11	1,273.02
Repairs of electric line construction	671.84
Removal of snow and ice	3,410.07
Repairs of buildings	88.16
Maintenance of equipment:	
Repairs of cars and other vehicles	2,975.40
Repairs of electric equipment of cars	2,838.35
Miscellaneous shop expense	630.33
Transportation expenses:	
Miscellaneous car service supplies and track oiling	1,892.62
Cost of electric motive power	21,042.56
Wages and compensation of persons employed in conducting transportation, ferry, \$1,312.27; cars, \$16,906.99	21,219.26
Damages for injuries to persons and property	2,000.00
Rentals of buildings and other property	285.20
Expenses of boats and docks, fuel, waste, and miscellaneous supplies for ferry	3,653.10
Total operating expenses	*\$69,093.51

PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING THE YEAR.

Construction tracks	\$5,304.00
Electric line construction	2,072.27
Construction bridges, fencing, Eliot bridge, engineer and superintendent's account	4,648.06
Total additions to railway	\$12,024.33

*\$7,965.37 of this amount is for operation of ferry for 8 months.

Construction cars	\$1,227.75	
Construction equipment and snow plow	591.69	
Total additions to equipment		\$1,819.44
Construction power stations and boiler house	\$183.45	
Construction rotary stations and storage battery	1,035.99	
Waiting room	1,376.64	
Total additions to lands and buildings		2,596.08
Construction boats, docks, and coal, handling machinery, also inter- est and discount	\$9,329.51	
Betterments to track line, bridges, telephone system, buildings, docks, and cars	5,395.95	
Total additions to other permanent property		14,725.46
Total additions to property accounts		\$31,165.31

GENERAL BALANCE SHEET.

<i>Assets.</i>		
Railway:		
Organization	\$17,959.52	
Roadbed and tracks	751,937.00	
Electric line construction, includ- ing poles, wiring, feeder lines, etc.	151,234.40	
Interest accrued during con- struction of railway	20,109.04	
Salaries, engineering, and other expenses incident to construc- tion	13,611.60	
Bridges	69,681.30	
Telephone line	3,088.49	
Total cost of railway owned		\$1,027,621.35
Equipment:		
Cars and other rolling stock and vehicles	\$64,267.39	
Electric equipment of same	44,346.17	
Boats and docks	57,533.90	
Miscellaneous equipment	1,323.08	
Total cost of equipment owned		167,470.54

Land and buildings:		
Fencing	\$9,175.89	
Land necessary for operation of railway	44,790.20	
Electric power stations, including equipment	64,100.74	
Other buildings necessary for operation of railway	43,521.94	
Total cost of lands and buildings owned		\$161,588.77
Other permanent property:		
Real estate investment	\$3,000.00	
Dover & Eliot Street Railway repaired by capital stock	25,000.00	
Dover & Eliot Street Railway repaired by funded debt	25,000.00	
Total cost of other permanent property owned		53,000.00
Total permanent investments		\$1,409,680.66
Cash and current assets:		
Cash	\$8,610.72	
Accounts receivable	2,806.66	
Total cash and current assets		11,417.38
Miscellaneous assets:		
Materials and supplies	\$7,521.68	
Prepaid insurance	623.59	
Prepaid taxes	41.19	
Total miscellaneous assets		8,186.46
Total		\$1,429,284.50
<i>Liabilities.</i>		
Capital stock, common		\$650,000.00
Funded debt		650,000.00
Current liabilities:		
Notes payable	\$61,500.00	
Audited vouchers and accounts	26,019.86	
Total current liabilities		87,519.86
Accrued liabilities:		
Interest accrued and not yet due	\$1,131.61	
Rentals accrued and not yet due	98.21	

Coupon interest accrued	\$5,687.50	
Accident funds accrued	761.27	
Total accrued liabilities		\$7,678.59
Profit and loss balance—surplus		34,086.05
Total		\$1,429,284.50
CAPITAL STOCK.		
Capital stock authorized by law, common		\$650,000.00
Capital stock authorized by votes of company, common		650,000.00
Capital stock issued and outstanding, common		650,000.00
Number of shares issued and outstanding, common		6,500
Number of stockholders, common		114
Number of stockholders in New Hampshire, common		12
Amount stock held in New Hampshire, common		\$55,300.00
FUNDED DEBT.		
Twenty year gold bond of the Portsmouth, Kittery & York Street Railway:		
Rate of interest	6 per cent	
Date of maturity	1917	
Amount outstanding	\$200,000.00	
Interest paid during year	8,000.00	
Twenty year gold bond of the Portsmouth, Dover & York Street Railway:		
Rate of interest	4½ per cent	
Date of maturity	1923	
Amount outstanding	\$450,000.00	
Interest paid during year	14,625.00	
VOLUME OF TRAFFIC, ETC.		
Number of passengers carried during the year, including ferry		1,960,486
Number of passengers carried per mile of railway track operated		38,570
Number of car miles run		555,810
Average number of persons employed		135
Part in operation July 1, 1903; all in operation August 13, 1903.		

EQUIPMENT OWNED.	
Box passenger cars equipped for electric power	11
Open passenger cars equipped for electric power	19
Total passenger cars of all kinds	30
Mail car, electric	1
Construction, repair, and other work cars	12
Snow plows	3
Electric motors	54
Other equipment, ferry boat, 1; steamer, 1	2

DESCRIPTION OF RAILWAY.	
Length of railway line owned	36.977 miles
Length of sidings, switches, etc., owned	1.537 "
Total length owned, computed as single track	38.514 "
Length of railway line held under lease or contract	2.783 "
Length of sidings, switches, etc., held under lease or contract . . . . .	.11 "
Total length, computed as single track, held under lease or contract	2.893 "
Total length operated, computed as single track	41.407 "
Length of railway operated outside of New Hampshire, 38.514 miles.	

Motive power, all electric.

System of electric motive power used by the company, General Electric, Westinghouse.

This railway is located in Kittery, Kittery Point, York, York Harbor, York Beach to St. Aspinquid Park, Eliot, South Berwick, and Dover. Connects with Portsmouth by ferry.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.	Number of tracks at crossing.	
	Railroad.	Railway.
With Branch to Portsmouth Navy Yard of the York Harbor and Beach Railroad.....	1	1
With Boston & Maine Railroad, Northern Division, at Great Works, Me.	2	1
Total.....	3	2

PROPER ADDRESS OF THE COMPANY.

PORTSMOUTH, DOVER & YORK STREET RAILWAY,

PORTSMOUTH, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, John F. Hill, Augusta, Me.; vice-president and treasurer, E. Burton Hart, Jr., 13 East 76th St., New York City; auditor, Albert D. Foster, Portsmouth, N. H.; clerk of corporation, Herbert M. Heath, Augusta, Me.; general counsel, Samuel W. Emery, Portsmouth, N. H.; general manager, Willis G. Meloon, Kittery, Me.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

John F. Hill, Augusta, Me.; E. Burton Hart, Jr., 13 East 76th St., New York City; George E. Macomber, Augusta, Me.; Sumner Wallace, Rochester, N. H.; Herbert M. Heath, Augusta, Me.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

JOHN F. HILL,

President.

E. BURTON HART, JR.,

Treasurer.

W. G. MELOON,

General Manager.

STATE OF MAINE.

YORK, ss. Kittery, October 21, 1904. Then personally appeared the above-named John F. Hill, E. Burton Hart, Jr., and W. G. Meloon, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

HORACE MITCHELL,

Notary Public.

REPORT

OF THE

PORTSMOUTH & EXETER STREET RAIL- WAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

[Leased to and operated by the Exeter, Hampton & Amesbury
Street Railway Company.]

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$18,425.63
Operating expenses	24,899.07
Gross loss above operating expenses	\$6,473.44
Rentals of leased railways	17,150.00
Net loss	\$23,623.44
Amount of deficit June 30, 1903	23,005.48
Total deficit June 30, 1904	\$46,628.92
Total income from lease of railway	\$17,150.00
Interest on funded debt	7,250.00
Surplus for the year ending June 30, 1904	\$9,900.00
Amount of surplus June 30, 1903	13,950.00
Total surplus June 30, 1904	\$23,850.00
EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$18,346.85
Receipts from advertising in cars	78.78
Gross income from operation	\$18,425.63

EXPENSES OF OPERATION.		
General expenses:		
Salaries of general officers and clerks . . .		\$938.96
General office expenses and supplies . . .		311.07
Insurance		646.95
Miscellaneous		171.32
Advertising		209.25
Maintenance of roadway and buildings:		
Repairs of roadbed and track		1,109.94
Repairs of electric line construction . . .		555.84
Removal of snow and ice		1,142.40
Repairs of buildings		159.00
Maintenance of equipment:		
Repairs of cars and other vehicles and electric equipment of cars		3,105.80
Transportation expenses:		
Cost of electric motive power		7,184.53
Wages and compensation of persons employed in conducting transportation		7,089.08
Damages for injuries to persons and property .		882.79
Tolls for trackage rights over other railways .		33.04
Rentals of buildings and other property . .		41.34
Car service, supplies and expenses		843.41
Cleaning and sanding track		474.35
Total operating expenses		\$24,899.07
PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING YEAR.		
Additions:		
New electric line construction, revised value	\$39,266.02	
Other additional rolling stock and vehicles	225.00	
Shop tools	4.70	
Total additions to property accounts . . .		\$39,495.72
Deductions:		
Railway and tracks, valuation	\$76,272.79	
Interest, valuation	6,569.13	
Engineering, valuation	3,863.05	
Cars, valuation	197.30	
Cars equipment, valuation	39.01	

Land and buildings, valuation	\$2,978.27	
Office furniture, valuation	249.57	
Total deductions from property accounts		\$90,169.12
Net deduction from property accounts for the year		\$50,673.40

GENERAL BALANCE SHEET.

*Assets.***Railway:**

Roadbed and tracks	\$124,214.04	
Electric line construction, including poles, wiring, feeder lines, etc.	96,842.52	
Interest accrued during construction of railway	451.38	
Salaries, engineering, and other expenses incident to construction	14,183.68	
Total cost of railway owned		\$235,691.62

Equipment:

Cars and other rolling stock and vehicles	17,521.00	
Electric equipment of same	9,600.00	
Other items of equipment	2,014.00	
Total cost of equipment owned		29,135.00

Land necessary for operation of railway, electric power stations, including equipment, and other buildings necessary for operation of railway

65,744.53

Other permanent property:

Office furniture and fixtures	\$91.86	
Shop tools	4.70	
Total cost of other permanent property owned		96.56

Total permanent investments	\$330,667.71
Bills and accounts receivable	31,100.00
Total	\$361,767.71

Liabilities.

Capital stock, common	\$165,000.00
Funded debt	145,000.00

Current liabilities:		
Loans and bills payable	\$20,667.71	
Matured interest coupons unpaid (including coupons due July 1)	7,250.00	
Total current liabilities		\$27,917.71
Profit and loss balance—surplus		23,850.00
Total		\$361,767.71

CAPITAL STOCK.		
Capital stock authorized by law, common		\$165,000.00
Capital stock authorized by votes of company, common		165,000.00
Capital stock issued and outstanding, common		165,000.00
Number of shares issued and outstanding, com- mon		1,650
Number of stockholders, common		6
Number of stockholders in New Hampshire, com- mon		2
Amount of stock held in New Hampshire, com- mon		\$164,600.00

FUNDED DEBT.		
First mortgage, gold bonds:		
Rate of interest		5 per cent.
Date of maturity		July 1, 1921
Amount outstanding		\$145,000.00

VOLUME OF TRAFFIC, ETC.		
Number of passengers carried during the year		380,522
Number of passengers carried per mile of rail- way track operated		31,763
Number of round trips run		6,202
Number of car miles run		148,600
Average number of persons employed		16

EQUIPMENT OWNED.		
Box passenger cars equipped for electric power		4
Open passenger cars equipped for electric power		4
Total passenger cars of all kinds		8

Number of all above cars with 8 wheels	8
Number of electric cars equipped with fenders	8
Snow plows	1
Electric motors	16

DESCRIPTION OF RAILWAY.

Length of railway owned and operated	11.980 miles
Length of sidings, switches, etc., owned and operated . . . . .	.256 "
Total length computed as single track	12.236 miles

Motive power, all electric.

System of electric motive power used by the company, Westinghouse and General Electric.

This railway is located in Portsmouth, Greenland, Stratham, and Exeter.

MISCELLANEOUS.

GRADE CROSSINGS WITH RAILROADS.	NUMBER OF TRACKS AT CROSSING.	
	Railroad.	Railway.
With Boston & Maine Railroad, Portsmouth Avenue, Greenland	1	.....
Total number of Tracks at crossings	1	.....

Number of above crossings at which frogs are inserted in the tracks, 1.

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers
Employees
Other persons	2	.....	2
Total	2	.....	2

STATEMENT OF EACH ACCIDENT.

December 22, 1903. Horse frightened. Driver, intoxicated, thrown from wagon.

January 17, 1904. Sleigh caught in track, struck by car and demolished. Horse injured, afterwards shot.

March 12, 1904. Car derailed, ran into pole, damaging car some. Two passengers. No injuries.

June 28, 1904. Man driving horses attached to a mowing machine. Horses became frightened and backed into car, damaging machine and cutting driver's finger some.

PROPER NAME AND ADDRESS OF THE COMPANY.

PORTSMOUTH & EXETER STREET RAILWAY COMPANY,
HAMPTON, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, D. A. Belden, 50 Merrimac street, Haverhill, Mass.; vice-president, F. P. Royce, 159 Devonshire street, Boston, Mass.; treasurer and auditor, Samuel P. Russell, 50 Merrimac street, Haverhill, Mass.; clerk of corporation and general counsel, S. W. Emery, Portsmouth, N. H.; general manager, Franklin Woodman, 50 Merrimac street, Haverhill, Mass.; superintendent, Clarence P. Hayden, Hampton, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

D. A. Belden, Haverhill, Mass.; F. P. Royce, Dedham, Mass.; S. W. Emery, Portsmouth, N. H.; F. W. Stearns, Newton, Mass.; R. H. Johnson, Braintree, Mass.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

D. A. BELDEN.

President.

SAMUEL P. RUSSELL,

Treasurer.

FRANKLIN WOODMAN,

General Manager.

COMMONWEALTH OF MASSACHUSETTS.

ESSEX, ss. November, 1904. Then personally appeared the above-named D. A. Belden, Samuel P. Russell, Franklin Woodman, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knoweldge and belief, true.

Before me,

EDMUND B. FULLER,
Justice of the Peace.

REPORT

OF THE

PORTSMOUTH ELECTRIC RAILWAY

FOR THE YEAR ENDING JUNE 30, 1904.

[Owned and operated by the Boston & Maine Railroad.]

GENERAL EXHIBIT FOR THE YEAR.	
Gross income from operation	\$66,487.41
Operating expenses	70,052.74
Deficit for year ending June 30, 1904, included in Boston & Maine Railroad account . . .	\$3,565.33
EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$65,755.35
Receipts from carriage of mails	498.74
Receipts from advertising in cars	233.32
Gross income from operation	\$66,487.41
EXPENSES OF OPERATION.	
General expenses:	
Legal expenses	\$429.95
Insurance	1,265.90
Miscellaneous	125.00
Maintenance of roadway and buildings:	
Repairs of roadbed and track	4,448.57
Repairs of electric line construction	1,359.91
Removal of snow and ice	2,936.97
Repairs of buildings, etc.	1,154.00
Maintenance of equipment:	
Repairs of cars and other vehicles	4,279.57
Repairs of electric equipment of cars	1,952.01
Other expenses	895.92

Transportation expenses:	
Cost of electric motive power	\$19,245.10
Wages and compensation of persons employed in conducting transportation	24,036.21
Damages for injuries to persons and property	7,749.41
Stationery, printing, and advertising	174.22
Total operating expenses	\$70,052.74

PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS
DURING THE YEAR.

Extension of railway and tracks	\$3,352.77
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GENERAL BALANCE SHEET.

Assets.

Railway:

Roadbed and tracks	\$244,324.00	
Electric line construction includ- ing poles, wiring, feeder lines, etc.	62,626.20	
Total cost of railway owned		\$306,950.20

Equipment:

Cars and other rolling stock and vehicles, and electric equipment of same		60,122.98
--	--	-----------

Land and buildings:

Land necessary for operation of railway	\$600.00	
Electric power stations, including equipment	93,110.35	
Other buildings necessary for operation of railway	13,877.72	
Total cost of lands and buildings owned		107,588.07
Total cost to June 30, 1904		\$474,661.25

This road was constructed by the Boston & Maine Railroad as an extension of the Portsmouth & Dover branch, and \$387,735.96 of the cost was paid by the proceeds of sale of Boston & Maine Railroad common stock held in the treasury.

VOLUME OF TRAFFIC, ETC.	
Number of passengers carried during the year .	1,046,553
Number of passengers carried per mile of rail- way track operated	57,064
Number of round trips run	67,054
Number of car miles run	368,517
Average number of persons employed	63
EQUIPMENT OWNED.	
Box passenger cars equipped for electric power .	10
Open passenger cars equipped for electric power	11
Total passenger cars of all kinds	21
Number of all above cars with 4 wheels	11
Number of all above cars with 6 wheels	10
Number of electric cars equipped with fenders .	21
Construction, repair, and other work cars	1
Snow plows	1
DESCRIPTION OF RAILWAY.	
Length of railway line owned and operated .	18.34 miles
Length of sidings, switches, etc. . . . .	.95 "
Total length computed as single track	19.29 "

Motive power, direct current overhead trolley.

This railway is located in Portsmouth, Rye, and North Hamp-
ton.

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.....	1	.....	1	.....	2
Employees	2	.....	2
Other persons...	5	1	1	1	6
Total.....	6	1	4	1	10

 STATEMENT OF EACH ACCIDENT.

July 23, 1903. Rye. Four persons thrown from team; horse frightened by blowing whistle close by.

August 21, 1903. Rye Beach. Conductor fell from running-board of moving car.

September 13, 1903. North Hampton. Thomas McCaffrey, lying asleep on track at night, run over by car and killed.

October 25, 1903. North Hampton. Trolley came off, jerked trolley catches out of socket, and struck man in face.

December 9, 1903. Portsmouth. Car struck back and injured woman in back.

January 9, 1904. Portsmouth. Man fell off moving snow plow.

March 14, 1904. Rye. Man got too close to moving car and was knocked down.

June 9, 1904. Portsmouth. Man jumped off moving car after his hat.

PROPER ADDRESS OF THE COMPANY.

BOSTON & MAINE RAILROAD,

BOSTON, MASS.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

[Management and operation of Portsmouth Electric Railway directed by officers of the Boston & Maine Railroad.]

President, Lucius Tuttle, Boston, Mass.; first vice-president and general manager, Frank Barr, Boston, Mass.; treasurer, Herbert E. Fisher, Boston, Mass.; fourth vice-president and general auditor, William J. Hobbs, Boston, Mass.; clerk of corporation, William B. Lawrence, Boston, Mass.; superintendent, Winslow T. Perkins, Boston, Mass.; assistant superintendent, A. F. Howard, Portsmouth, N. H.

NAMES AND RESIDENCE OF BOARD OF DIRECTORS.

Lucius Tuttle, Boston, Mass.; Samuel C. Lawrence, Medford, Mass.; Richard Olney, Boston, Mass.; A. W. Sulloway, Franklin, N. H.; Joseph H. White, Brookline, Mass.; Walter Hunnewell, Wellesley, Mass.; Henry R. Reed, Boston, Mass.; Lewis Cass Ledyard, New York, N. Y.; Henry M. Whitney, Brookline, Mass.; Henry F. Dimock, New York, N. Y.; William Whiting, Holyoke, Mass.; Charles M. Pratt, New York, N. Y.; Alexander Cochrane, Boston, Mass.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

LUCIUS TUTTLE,
President.

HERBERT E. FISHER,
Treasurer.

WILLIAM J. HOBBS,
Fourth Vice-President and General Auditor.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. Boston, September 29, 1904. Then personally appeared the above-named Lucius Tuttle, Herbert E. Fisher, and William J. Hobbs, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

E. A. RYDER,
Justice of the Peace.

REPORT

OF THE

SEABROOK & HAMPTON BEACH STREET RAILWAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

[Leased to and operated by Exeter, Hampton & Amesbury Street
Railway Company.]

GENERAL EXHIBIT FOR THE YEAR.

Gross income from operation	\$16,990.69
Operating expenses	9,445.78
Net income from operation	\$7,544.91
Charges upon income accrued during the year:	
Rentals of leased railways.	\$5,550.00
Bridge	3,000.00
Total charges and deductions from income	8,550.00
Deficit for year ending June 30, 1904	\$1,005.09
Amount of deficit June 30, 1903	9,253.26
Total deficit June 30, 1904	\$10,258.35
Total income from lease of railway	\$5,550.00
Interest on funded debt	2,250.00
Surplus for the year ending June 30, 1904	\$3,300.00
Amount of surplus June 30, 1903	4,650.00
Total surplus June 30, 1904	\$7,950.00
Not operated from December 1, 1903, to March 31, 1904.	

EARNINGS FROM OPERATION.	
Receipts from passengers carried	\$16,963.73
Receipts from advertising in cars	26.96
Gross income from operation	\$16,990.69
EXPENSES OF OPERATION.	
General expenses:	
Salaries of general officers and clerks	\$356.06
General office expenses and supplies	117.98
Insurance	245.32
Other general expenses	64.96
Advertising	79.35
Maintenance of roadway and buildings:	
Repairs of roadbed and track	420.88
Repairs of electric line construction	210.77
Removal of snow and ice	433.21
Repairs of buildings	60.30
Maintenance of equipment:	
Repairs of cars and other vehicles and electric equipment of cars	1,177.75
Transportation expenses:	
Cost of electric motive power	2,724.41
Wages and compensation of persons employed in conducting transportation	2,688.31
Damages for injuries to persons and property	334.76
Tolls and transfers	31.20
Rentals of buildings and other property . . .	15.67
Car service, supplies and expenses	304.98
Cleaning and sanding track	179.87
Total operating expenses	\$9,445.78
PROPERTY ACCOUNTS: ADDITIONS AND DEDUCTIONS DURING YEAR.	
Extension of railway and tracks	\$80.61
New electric line construction	628.77
Engineering and superintendence	19.51
Net additions to property accounts for the year	\$728.89

GENERAL BALANCE SHEET.

Assets.

Railway:	
Roadbed and tracks . . . , .	\$84,517.72
Electric line construction, including poles, wiring, feeder lines, etc.	22,837.35
Salaries, engineering, and other expenses incident to construction	3,970.80
Total cost of railway owned	\$111,325.87
Land necessary for operation of railway, electric power stations, including equipment, and other buildings necessary for operation of railway	150.00
Total permanent investments	\$111,475.87
Bills and accounts receivable	10,200.00
Total	\$121,675.87

Liabilities.

Capital stock, common	\$55,000.00
Funded debt	45,000.00
Current liabilities:	
Loans and bills payable	\$11,475.87
Matured interest coupons unpaid (including coupons due July 1)	2,250.00
Total current liabilities	13,725.87
Profit and loss balance—surplus	7,950.00
Total	\$121,675.87

CAPITAL STOCK.

Capital stock authorized by law, common	\$55,000.00
Capital stock authorized by votes of company, common	55,000.00
Capital stock issued and outstanding, common	55,000.00
Number of shares issued and outstanding, common	550
Number of stockholders, common	6
Number of stockholders in New Hampshire, common	2
Amount of stock held in New Hampshire, common	\$54,600.00

FUNDED DEBT.	
First mortgage, gold bonds:	
Rate of interest	5 per cent.
Date of maturity	July 1, 1921
Amount outstanding	\$45,000.00
VOLUME OF TRAFFIC, ETC.	
Number of passengers carried during year	345,133
Number of passengers carried per mile of rail- way track operated	62,377
Number of round trips run	5,810
Number of car miles run	64,300
Average number of persons employed	9
DESCRIPTION OF RAILWAY.	
Length of railway line owned and operated	5.533 miles
Length of sidings, switches, etc., owned and operated . . . . .	.271 "
Total length, computed as single track	5.804 "

Motive power, all electric.

System of electric motive power used by the company, West-
inghouse and General Electric.

This railway is located in Smithtown, Seabrook, and Hampton
Beach.

ACCIDENTS TO PERSONS.

	From causes beyond their own control.		From their own misconduct or carelessness.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers.....						
Employees.....						
Other persons.....				1		1
Total.....				1		1

STATEMENT OF EACH ACCIDENT.

July 25, 1903. Man lying near track at night, struck by car.
Hand crushed and head cut.

PROPER ADDRESS OF THE COMPANY.

SEABROOK & HAMPTON BEACH STREET RAILWAY
COMPANY,

HAMPTON, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, D. A. Belden, 50 Merrimac street, Haverhill, Mass.;
vice-president, F. P. Royce, 159 Devonshire street, Boston, Mass.;
treasurer and auditor, Samuel P. Russell, 50 Merrimac street,
Haverhill, Mass.; clerk of corporation and general counsel, S. W.
Emery, Portsmouth, N. H.; general manager, Franklin Wood-
man, 50 Merrimac street, Haverhill, Mass.; superintendent, Clar-
ence P. Hayden, Hampton, N. H.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

D. A. Belden, Haverhill, Mass.; F. P. Royce, Dedham, Mass.;
S. W. Emery, Portsmouth, N. H.; F. W. Stearns, Newton, Mass.;
R. H. Johnson, Braintree, Mass.

We hereby certify that the statements contained in the fore-
going report are full, just, and true.

D. A. BELDEN,

President.

SAMUEL P. RUSSELL,

Treasurer.

FRANKLIN WOODMAN,

General Manager.

COMMONWEALTH OF MASSACHUSETTS.

ESSEX, ss. November, 1904. Then personally appeared the
above-named David A. Belden, Samuel P. Russell, Franklin Wood-
man, and severally made oath that the foregoing certificate by
them subscribed is, to the best of their knowledge and belief,
true.

Before me,

• EDMUND B. FULLER,

Justice of the Peace.

REPORT

OF THE

SPRINGFIELD ELECTRIC RAILWAY COMPANY

FOR THE YEAR ENDING JUNE 30, 1904.

GENERAL BALANCE SHEET.	
<i>Assets.</i>	
Roadbed and tracks	\$12,000.00
Annual rental	1.00
Total	\$12,001.00
<i>Liabilities.</i>	
Capital stock, common	\$12,000.00
Paid clerk and treasurer's expenses	1.00
Total	\$12,001.00

PROPER ADDRESS OF THE COMPANY.

SPRINGFIELD ELECTRIC RAILWAY COMPANY,

CHARLESTOWN, N. H.

NAMES AND BUSINESS ADDRESS OF PRINCIPAL OFFICERS.

President, Nathaniel G. Brooks, Charlestown, N. H.; vice-president, James A. Hunt, Charlestown, N. H.; treasurer, Frank W. Hamlin, Charlestown, N. H.; auditors, A. J. Crosby, E. C. Crosby, Springfield, Vt., and N. G. Brooks, Charlestown, N. H.; clerk of corporation, Frank W. Hamlin, Charlestown, N. H.; superintendent, A. J. Crosby, Springfield, Vt.

NAMES AND RESIDENCES OF BOARD OF DIRECTORS.

Nathaniel G. Brooks, Frank W. Hamlin, James A. Hunt, Charlestown, N. H.; Edward C. Crosby, Brattleboro, Vt.; Marcus A. Coolidge, Fitchburg, Mass.

We hereby certify that the statements contained in the foregoing report are full, just, and true.

N. G. BROOKS.

President.

FRANK W. HAMLIN,

Treasurer.

STATE OF NEW HAMPSHIRE.

SULLIVAN, ss. July 25, 1904. Then personally appeared the above-named Nathaniel G. Brooks, president, and Frank W. Hamlin, treasurer, and severally made oath that the foregoing certificate by them subscribed is, to the best of their knowledge and belief, true.

Before me,

FRED H. PERRY,
Justice of the Peace.

PART IV.

PETITIONS, ORDERS, AND FINDINGS.

PETITIONS, ORDERS, AND FINDINGS.

CONCORD & MONTREAL RAILROAD STOCK.

To the Honorable Board of Railroad Commissioners of the State of New Hampshire:

Respectfully represents your petitioner, the Concord & Montreal Railroad, that it is a corporation existing under the laws of said state, and has a franchise to operate a railroad therein; that, by authority of law, on June 29, 1895, it leased its railroad and railroad property to the Boston & Maine Railroad, a corporation existing by virtue of law; that at a meeting of the stockholders of said Concord & Montreal Railroad, duly called and held for the purpose in Concord, N. H., on Wednesday, April 8, 1903, at 11.30 o'clock in the forenoon, upon lawful notice pursuant to a call by order of the board of directors,—a copy thereof is herewith submitted,—the holders of a majority of the capital stock of said corporation, acting under Art. II of said call, relative to the proposed increase of capital stock, voted by a vote of eighteen thousand two hundred and fifty-three (18,253) in favor, and but thirty-three (33) opposed, to increase the capital stock of this corporation, by an issue of not exceeding five thousand (5,000) new shares, for the purpose of the acquirement of the Concord Street Railway property, by the purchase of the stock and bonds and other obligations thereof, the improvement and extension of its road, including a change of its gauge and providing additional equipment therefor, as a permanent addition to the Concord & Montreal Railroad, under the authority of the special act of the legislature, approved January 29, 1903, entitled, "An act authorizing the Concord & Montreal Railroad, lessor, to acquire the Concord Street Railway and other property, to issue stock and bonds to pay therefor, and authorizing a physical connection of the Manchester Street Railway with the electric branches of the Concord & Montreal Railroad," and the provisions of said lease to the Boston & Maine Railroad, said stock to be issued from time to time by the directors of the Con-

cord & Montreal Railroad, as may be required for said purposes, and disposed of in accordance with the provisions of said act of the legislature and said lease, a copy of which vote and that accepting said act are hereunto appended;

That by virtue of an order of approval of your board, made on May 4, 1903, upon the petition of the Concord & Montreal Railroad, filed April 9, 1903, there have been issued one thousand (1,000) of said five thousand (5,000) shares of the capital stock, authorized by said vote of the stockholders, passed, as aforesaid, on April 8, 1903, and the proceeds thereof applied to the purposes therein specified;

And your petitioner further represents that the board of directors of the Concord & Montreal Railroad, at their meeting on November 25, 1903, duly notified and held, by a vote passed in pursuance of said vote of the stockholders,—a copy of which is hereunto appended,—authorized and directed the president, in the name and behalf of said corporation, under and by virtue of the authority of said vote of its stockholders and said vote of its directors, to petition your honorable board for its approval and authorization, conformably to law, of a further and additional issue at this time of a part of said five thousand (5,000) shares of said increased capital stock, viz.: fifteen hundred (1,500) shares, under and by virtue of the authority of said votes, and for the purposes set forth in said vote of the stockholders and in said vote of the directors, passed on said November 25, 1903, the proceeds of said fifteen hundred (1,500) shares of new capital stock to be applied, conformably to law, for the purpose of purchasing the bonds and stock of said Concord Street Railway, and provide means to pay the expense of changing the gauge and purchase new equipment for said Concord Street Railway;

And your petitioner further represents that the amount of the avails of said stock, which it desires to apply, respectively, to each of said purposes, is specified in the schedule hereinafter referred to, and is substantially the amount, as near as may be, which the said corporation desires shall be approved, authorized, and determined upon by your honorable board as being reasonably requisite and necessary for said purposes, respectively;

And your petitioner further represents that the said purposes for which it is proposed to make said issue of stock are lawful and consistent with the public interest; that said issue of said fifteen hundred (1,500) shares of new capital stock at this time is reasonably requisite for the said purposes for which said issue of stock is authorized, to enable your petitioner to carry

out said purposes in good faith; and that the amount of stock which the corporation desires to apply to each of said purposes, respectively, is separately specified and set forth in the schedule hereunto annexed.

Wherefore, your petitioner, the Concord & Montreal Railroad, respectfully petitions your honorable board that it will approve and authorize for the said purposes said issue of fifteen hundred (1,500) new shares of the capital stock of said Concord & Montreal Railroad, as being an issue to an amount reasonably requisite and necessary for said purposes for which the same is authorized and desired; and that your honorable board will prescribe the city of Boston as the city in which, in the manner provided by law, said new shares shall be offered for sale by public auction to the highest bidder; and that the board will also prescribe the daily newspapers, not less than three in number, in which notice shall be published of the time or times and the place of such sale, at least five times during the ten days immediately preceding the sale, in the manner provided by law; and that your honorable board will also approve and authorize and determine that the amount of said capital stock reasonably necessary and requisite for each of said respective purposes shall be substantially the amount as specified and set forth therefor in said schedule, the proceeds of said issue of said stock to be applied for the said purposes, and no other, conformably to law, to the amounts, respectively, and in the respective proportions, as approved, authorized, determined upon, and specified by your honorable board for each of said purposes, respectively.

CONCORD & MONTREAL RAILROAD.

By BENJAMIN A. KIMBALL,

President.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

Upon the petition of the Concord & Montreal Railroad for approval of an additional issue of fifteen hundred (1,500) shares of stock, it appearing after due notice and hearing and such further investigation as was deemed requisite that the issue by the Concord & Montreal Railroad, of capital stock to an amount not exceeding at par value five hundred thousand dollars (\$500,000) has been duly authorized to provide means for the purpose of the acquirement of the Concord Street Railway property, by the purchase of the stock and bonds and other obligations thereof, the improvement and extension of its road, including a change of its gauge, and providing additional equip-

ment therefor, as a permanent addition to the Concord & Montreal Railroad, under the authority of the special act of the legislature, approved January 29, 1903, entitled, "An act authorizing the Concord & Montreal Railroad, lessor, to acquire the Concord Street Railway and other property, to issue stock and bonds to pay therefor, and authorizing a physical connection of the Manchester Street Railway, and the electric branches of the Concord & Montreal Railroad";

That by virtue of an order of approval of this board made on May 4, 1903, upon the petition of said Concord & Montreal Railroad, filed April 9, 1903, there have been issued one thousand (1,000) shares of the capital stock authorized, as aforesaid, for the purposes enumerated in said order and contemplated by said special act of the legislature; it is

Ordered that the approval of the board be hereby given to the issue, at this time, by the Concord & Montreal Railroad, of fifteen hundred (1,500) additional shares, part of said authorized issue of five thousand (5,000) shares of capital stock, amounting at par to one hundred and fifty thousand dollars (\$150,000), as an issue of stock reasonably necessary and of the amount required for part of the purposes for which the issue of said five thousand (5,000) shares has been authorized.

The proceeds of said fifteen hundred (1,500) shares of said stock, the issue of which is hereby authorized, at this time, shall be applied only as follows:

1. For the purchase of the bonds of the Concord Street Railway, \$116,000.
2. For the purchase of the stock of the Concord Street Railway, outstanding on November 1, \$15,450.
3. To pay cost of change of gauge, \$65,000.
4. To pay cost of changing and improving old equipment, \$15,000.
5. To purchase new equipment, \$64,000.

And the board hereby prescribes the city of Boston as the city in which, in the manner provided by law, said new shares, hereby authorized, shall be offered for sale by public auction to the highest bidder; and that the *Boston Advertiser*, the *Boston Transcript*, and the *Boston Herald* are prescribed as the daily newspapers in which notice shall be published of the time, or times, and the place of such sale, at least five times during the ten days immediately preceding such sale, in the manner provided by law.

HENRY M. PUTNEY,
ARTHUR G. WHITTEMORE,
GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

KEENE ELECTRIC RAILWAY COUPON NOTES.

To the Honorable Board of Railroad Commissioners of the State of New Hampshire:

GENTLEMEN:—Respectfully represents the directors of the Keene Electric Railway Company,—

That by authority of your honorable board said corporation has leave to issue \$250,000 of capital stock and \$80,000 of first mortgage bonds.

That of the above, \$30,000 of said stock was authorized for the purpose of retiring floating indebtedness of the company, but has not been issued, and said indebtedness is still outstanding.

That of the above, \$100,000 stock and \$20,000 bonds were authorized for the extension of said company's railway into the town of Swanzey.

That your petitioners represent that, in addition to estimates submitted for said extension, there should be added for contingencies, expense of feeder lines, rights of way, etc., at least \$50,000.

They further represent that at a meeting of the stockholders of said company, duly called and held on the twenty-ninth day of December, 1903, a majority of the stockholders being present, said stockholders authorized an issue of coupon notes amounting to \$80,000, payable \$4,000 each year for a period of twenty years, with interest at the rate of five per cent. for the payment of the floating indebtedness of the company, and also for the purpose of the payment of indebtedness incurred or to be incurred in the extension of this company's track and overhead system in the city of Keene and into the town of Swanzey, and the purchase of such additional rolling stock and appurtenances as may be necessary and convenient therefor, and for any and all of said purposes.

Wherefore, your petitioners pray that said company may be authorized to issue coupon notes to the amount of \$80,000, as provided by and for the purposes set forth in the vote of said stockholders of December 29, 1903, a certified copy of which is hereto annexed.

JOHN H. JENNINGS,
CHARLES O. WHITING,
GEORGE A. LITTLEFIELD.
DANIEL R. COLE,
THOMAS T. ROBINSON,
GEORGE E. WHITING,
FREDERICK N. TIRRELL,

Directors of the Keene Electric Railway Company.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, March 8, 1904.

In the matter of the petition of the Keene Electric Railway Company, asking the approval by this board of the issue of eighty thousand dollars (\$80,000) of five per cent coupon notes, payable four thousand dollars (\$4,000) each year for twenty years; due notice having been given, a hearing was had at the office of the board in Concord at eleven o'clock A. M., on Tuesday, February 16, 1904, at which hearing the petitioning corporation was represented by its attorney, Hon. Charles H. Hersey, and Thomas T. Robinson, one of its directors, and no one appeared in opposition. By the testimony and other evidence submitted, it was shown that the corporation has already been authorized to issue two hundred and fifty thousand dollars (\$250,000) of capital stock and eighty thousand dollars (\$80,000) of bonds, of which one hundred and forty thousand dollars (\$140,000) in stock and all the bonds have been issued and are now outstanding; that thirty thousand dollars (\$30,000) of the stock was authorized for the purpose of paying floating indebtedness and one hundred thousand dollars (\$100,000) of stock and twenty thousand dollars (\$20,000) of the bonds for a proposed extension of its line to Swanzey, which, according to the specifications and estimates of Gilbert Hodges, engineer, made in May, 1903, would cost \$120,564.68; that the thirty thousand dollars (\$30,000) of stock has not been issued to pay the floating indebtedness which has not been cancelled but largely increased; that twenty thousand dollars (\$20,000) in stock authorized for the Swanzey extension has been issued and the extension has been begun; that in addition to the cost of this extension, as figured by Mr. Hodges in 1903, there will be a necessary outlay for equipment, additional feeder lines, rights of way, etc., estimated by T. T. Robinson for the petitioners at \$49,977, making the total expense of the extension \$170,541.68, of which \$20,000 has been paid with the proceeds of an issue of stock of that amount, and that the petition is to the effect that \$30,000 of coupon notes may be allowed to pay floating indebtedness instead of that amount of stock already authorized, and \$50,000 more of such notes for the expense of the extension as calculated by Mr. Hodges and the petitioners. Included in these combined estimates is the sum of \$25,425.93 for superintendence, engineering, contingencies, interest, etc., which is clearly excessive by one half. Deducting this excess, the needs of the company for legitimate purposes appear to be:

For the payment of its floating debt, \$30,000; for the Swanzey extension, \$158,841.68, less the \$20,000 received for bonds authorized and sold for that purpose, or \$138,841.68; making \$168,841.68.

It further appears that the company has authority to issue \$110,000 in stock for these purposes, or \$80,000, if, as it proposes, \$30,000 on coupon notes be substituted for that amount of stock, and that if such stock is issued the amount outstanding will be \$220,000 and the indebtedness, if the coupon notes are authorized and issued, will be \$80,000 in bonds and \$80,000 in coupon notes, or \$160,000.

It is therefore voted and ordered that the board approves the issue of \$80,000 of coupon notes by said Keene Electric Railway Company, subject to the provisions of law applicable to such issue, upon the condition that the proceeds of such issue shall be applied, first, to the cancellation of the floating debt of said company, and, secondly, to the construction and equipment of its Swanzey extension, according to the written estimates of Gilbert Hodges and Thomas T. Robinson, less one half the amounts included in those estimates for engineering, superintendence, contingencies, and interest, and upon the further condition that no more of such notes shall be issued than are necessary for the purposes specified in said estimates, which are hereby made a part of this order.

It is further ordered that said company shall open and keep accounts under headings which will show in detail, clearly and exactly, what amounts have been expended and for what purpose under this order.

HENRY M. PUTNEY,
A. G. WHITEMORE,
GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

LACONIA STREET RAILWAY STOCK AND BONDS.

To the Board of Railroad Commissioners of the State of New Hampshire:

The directors of the Laconia Street Railway respectfully represent that said corporation was chartered by acts of the legislature, approved July 27, 1881, amended March 31, 1893, and March 13, 1895; that by said acts the capital stock of said corporation is fixed and limited at \$100,000, and it is thereby provided that its bonded indebtedness shall not exceed the capital stock paid in; that you have already authorized and approved of the issue of capital stock amounting to \$100,000 and have also approved of the bonded indebtedness of \$91,000, all of which have

been issued, and all have been sold with the exception of a \$1,000 bond now in the treasury of the company; that in the construction of a steam power plant, changing the gauge of the road from three feet to standard gauge, changing the equipment to standard gauge and otherwise improving the property, there has been incurred a floating indebtedness of more than \$80,000, some of which is already in suit and judgment may be taken thereon at any time; that a meeting of the stockholders of said Laconia Street Railway legally called and holden on the eighth day of February, 1904, of the purpose and scope of which each individual stockholder was given a personal notice at his last known address, it was duly voted that, subject to the approval of the board of railroad commissioners, the capital stock of the corporation be increased beyond the amount authorized by its charter and already issued, by the further sum of not exceeding \$40,000 of preferred stock and the issue of mortgage bonds be increased by the amount of not exceeding \$40,000.

Wherefore the petitioners pray, agreeably to the provision of chapter 19 of the laws of 1897, that for the purpose of paying the indebtedness of said Laconia Street Railway you approve of the increase of the preferred capital stock and bonds of said corporation to the extent of \$40,000 each.

ALBERT G. FOLSOM,
SAMUEL B. SMITH,
CHARLES F. STONE,
EDMUND LITTLE,

Directors Laconia Street Railway.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, April 14, 1904.

In the matter of the petition of the Laconia Street Railway, asking the approval of the board to the issue of forty thousand dollars (\$40,000) of the capital stock of said corporation and forty thousand dollars (\$40,000) of mortgage bonds, beyond the amount as now fixed and established.

Due and sufficient notice thereof having been given, a hearing was had upon said petition at the office of the board in Concord on the thirty-first day of March, 1904, at 11 o'clock in the forenoon, at which hearing, all of the commissioners being present, the petitioner appeared by its counsel and officers and presented its evidence, statements, and arguments before

the board, and no one appeared in opposition to the prayer of the petition.

It appeared to the board, after full investigation and hearing, that said Laconia Street Railway is authorized by its charter to issue capital stock to the amount of one hundred thousand dollars (\$100,000); that at the present time its capital stock is legally established at one hundred thousand dollars (\$100,000), all of which has been issued; and that it has legally issued mortgage bonds to the amount of ninety-one thousand dollars (\$91,000); that the stockholders of said corporation, at a meeting legally called and holden on February 8, 1904, unanimously voted to increase its capital stock to the extent of forty thousand dollars (\$40,000) beyond the amount now fixed and established, and to issue forty thousand dollars (\$40,000) of additional mortgage bonds, as aforesaid, for the purposes set forth in said petition.

It further appeared to the board that since said capital stock was fixed and limited at one hundred thousand dollars (\$100,000), as aforesaid, said corporation has rebuilt its lines and added electrical equipment and rolling stock, and has made other permanent improvements on account of which it now has a floating debt of eighty-one thousand dollars (\$81,000).

Now, therefore, it being deemed and voted by the board, after due consideration of the premises, that the sum of eighty thousand dollars (\$80,000) in money is reasonably requisite in addition to the stock heretofore authorized to enable said corporation to carry out the purposes set forth in said petition, so far as the same are hereinafter set forth and approved, it is ordered that the board approve the issue of forty thousand dollars (\$40,000) stock in addition to the capital stock heretofore fixed and limited, and forty thousand dollars (\$40,000) of mortgage bonds.

1. It is made a condition of this order that the proceeds of the sale of said stock and bonds shall be applied to the extinguishment of said floating debt created as set forth in said petition.

2. All of said new shares shall be offered proportionately to the stockholders of said corporation, giving said stockholders the right to subscribe and pay in cash for the same at not less than the market value thereof, which the board hereby determines to be one hundred dollars (\$100) per share.

3. All shares of stock not subscribed for by the stockholders as aforesaid shall be sold at public auction, either by the brokers' board in the city of Boston, Mass., or at the office of said corporation in said Laconia, as the directors of said corporation may

direct by proper vote. If sold in said Boston notice of the time and place of sale shall be published in the *Boston Daily Advertiser* and the *Boston Morning Journal*, newspapers published in said Boston, five times at least during the ten days immediately preceding the sale. And if sold in said Laconia, by publication of notice in the same manner in the *Daily Mirror and American* and the *Union*, newspapers published in Manchester, and the *Concord Evening Monitor*, a newspaper published in Concord.

HENRY M. PUTNEY,
A. G. WHITTEMORE,
GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

STREET RAILWAY TRANSFERS IN NASHUA.

RESOLUTION

AUTHORIZING A PETITION TO RAILROAD COMMISSIONERS AS TO
STREET RAILWAY TRANSFERS.

CITY OF NASHUA.

IN THE YEAR OF OUR LORD ONE THOUSAND NINE HUNDRED AND
FOUR.

*Resolved, By the Mayor and Aldermen and Common Council of the
City of Nashua, in City Council assembled, as follows:*

That the following petition be presented to the railroad commissioners of the state of New Hampshire:

PETITION.

To the Honorable Railroad Commissioners:

WHEREAS, Section 13, chapter 155 of the Public Statutes of New Hampshire give the railroad commissioners authority to fix the charges to be made by the proprietors of railroads within this state for the transportation of persons and freight, and shall change the same from time to time as the public good shall require;

WHEREAS, The public good requires the issuance and acceptance of transfers to and from connecting lines of street railway in the city of Nashua;

WHEREAS, The Boston & Northern Street Railway, as lessee of the Nashua Street Railway, now refuse to accept the transfers of the Hudson, Pelham & Salem Street Railway in the city of Nashua;

WE THEREFORE, Your petitioners, pray that we may be granted a hearing in order that we may be given relief from the existing conditions; and that notice of such hearing be given to the Boston & Northern Street Railway as lessee of the Nashua Street Railway Company, and notice also to the Hudson, Pelham & Salem Railway Company.

MAYOR AND ALDERMEN AND COMMON COUNCIL OF THE
CITY OF NASHUA, N. H.

And it is further resolved. That the present joint transfer committee of the Nashua city councils are hereby authorized to represent the mayor and aldermen and common council, as petitioners, before any and all hearings of the foregoing petition.

NASHUA, N. H., March 4, 1904.

To Henry M. Putney, Chairman Railroad Commissioners, Manchester, N. H.:

DEAR SIR:—The city of Nashua has been trying to arrange with the Hudson, Pelham & Salem and the Boston & Northern to accept each other's transfers, and the Boston & Northern refuses. The city council passed a resolution asking your commission to act.

We would like a hearing as soon as possible on this question. If your commission are of the opinion that they have no authority in the matter will you kindly notify me that I may so advise the city council. The authority under which it asks for this hearing is section 13 of chapter 155 of the Public Statutes, which gives your committee the same authority over street railways that you have over steam railroads.

Very truly yours,

IVORY C. EATON,
City Solicitor.

MANCHESTER, N. H., March 5, 1904.

Ivory C. Eaton,
City Solicitor,
Nashua, N. H.

In reply to yours of the 4th inst., permit me to say, if I understand your petition, it is to the effect that the Boston & Northern railroad be compelled to transport, free of charge, in the city of Nashua, the passengers of the Hudson, Pelham & Salem railroad who may be given transfers by that road.

If I am correct, we must hold that we have no jurisdiction in the case. We are authorized to fix maximum fares upon railroads upon the petition of parties interested, but it seems to me

absurd to say that this provision of the law gives us the power to compel one road to carry the passengers of another, free, or for less than it charges its own, between any given points. But as I have said in a previous letter, if you desire a hearing, I will appoint one.

Yours truly,

H. M. PUTNEY,

Chairman.

NASHUA, N. H., March 9, 1904.

To Henry M. Putney,

Chairman Railroad Commissioners,

Manchester, N. H.

DEAR SIR:—The committee on transfers of the city government wish me to send you a copy of a letter of D. A. Belden, president of the Hudson, Pelham & Salem, to the committee:

In the matter of transfers between the cars of this company and the Boston & Northern cars, it is my understanding that you are awaiting a reply from us relative to the request of your committee that such an arrangement be made between the two companies, and I therefore beg to report as follows:

This company is under contract with the Boston & Northern Street Railway company for trackage and terminal privileges in Nashua, and one of the terms of the contract provides that we shall accept their transfers on our cars without compensation. Another stipulation provides that we shall pay to the Boston & Northern two cents per passenger carried in our cars while on the tracks of the Boston & Northern. These obligations are made a part of the compensation by which our cars are permitted to enter Nashua.

I have addressed a letter to Mr. P. H. Sullivan, president of the Boston & Northern Street Railway company, asking, first, What if anything will your company do relative to exchanging transfers with our company at Nashua? And, second, In event that you are willing to exchange transfers with us upon what basis would you do so?

I have received the following reply:

"Replying to your inquiry of the 18th inst., as to what, if anything, this company will do relative to exchanging transfers with your company at Nashua: As a matter of principle this company is opposed to exchanging transfers with any other company and does not do so on any portion of its territory.

"As to your second inquiry, if we should exchange transfers, upon what basis we should do so? Should we arrive at this view of the situation we should insist upon at least two and one-half cents for every transfer we should receive.

"Very respectfully,

"P. F. SULLIVAN,

"President."

You will see by the above that the Boston & Northern Street Railway company will in event of a transfer agreement being reached demand from us two and one-half cents from every transfer which they receive from our cars, and on such passengers as are transferred we have already paid two cents as provided in our contract, we will have but one-half cent left as income from such riding as occurs on our last five cents fare limit, and of course we cannot consider doing business on this basis.

We must, therefore, formally reply to your committee by stating that we cannot under the conditions comply with the request for an exchange of transfers, and I trust that the explanation furnished will satisfy you of our reasons for this conclusion.

Very respectfully,

D. A. BELDEN,
President.

The condition of things in Nashua is this: a passenger boards a Hudson, Pelham & Salem car at the Nashua junction, the car carries him to the junction of East Pearl and Main streets, he wishes to go somewhere in the city limits, he is obliged to pay another fare to the Boston & Northern, which road, therefore, gets seven cents for carrying a passenger in the city limits. We think that under these circumstances the interest of the city of Nashua demands that we ask a hearing and if you will kindly arrange for the same the committee will appreciate your kindness.

Respectfully yours,

IVORY C. EATON,
City Solicitor.

MANCHESTER, N. H., March 10, 1904.

*Ivory C. Eaton, City Solicitor,
Nashua, N. H.*

DEAR SIR:—I am in receipt of yours of the 9th inst., relative to the petition of the city of Nashua. If you will kindly suggest when and where, a fortnight hence, a hearing will best convene you, I will appoint one. We have an appointment March 31, at Concord. All other dates after the 20th are open.

Yours truly,
H. M. PUTNEY.

A hearing having been appointed, was held, and after all parties had been heard the petition was dismissed for want of jurisdiction.

BRIDGE GUARDS.

BOSTON & MAINE RAILROAD, CONCORD DIVISION.

SUPERINTENDENT'S OFFICE.

CONCORD, N. H., April 19, 1904.

*Hon. H. M. Putney,**Chairman Railroad Commissioners,**Manchester, N. H.*

DEAR SIR:—The distance between bridges 95 and 96 on the Concord division, just north of East Lebanon, is only 151 feet, and therefore it is not practicable to erect bridge guards at the distance from the bridge as specified in order of the board dated January 30, 1895.

Also at bridge 45, six miles south of Andover, bridge guard, if located between 147 and 153 feet from the bridge as described by the general order, would come within the traveled portion of a highway crossing the track, and therefore would be a dangerous obstruction to travel.

Also distance between bridges 111 and 112, about 1.85 miles south of West Lebanon, is only 129 feet, which makes it impossible to comply with the order named.

In the first case, will you kindly give permission to locate bridge guard within three feet of a point midway between the north end of bridge 95 and south end of bridge 96?

In the second case, authorize the location of bridge guard from 142 to 146 feet south of the bridge, which would take it out of the highway.

In the third case, allow bridge guard to be located at some point within three feet of a point midway between north end of bridge 111 and south end of bridge 112.

All of which will be very much appreciated.

Yours truly,

W. F. RAY,

Superintendent.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, April 20, 1904.

It having been shown that it is impracticable to locate bridge guards so as to comply exactly with the general order relating

thereto at three points upon the Concord division of the Boston & Maine railroad, the board approves the location of such guards within three feet of a point midway between the north end of the bridge No. 95 and the south end of bridge No. 96, at a point from 142 feet to 146 feet south of bridge No. 45 and within three feet of a point midway between the north end of bridge No. 111 and the south end of bridge No. 112, upon said division.

HENRY M. PUTNEY,

ARTHUR G. WHITTEMORE,

GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

MANCHESTER TRACTION COMPANY BONDS.

To the Honorable Board of Railroad Commissioners:

Respectfully represents the Manchester Traction, Light & Power company, a corporation duly established by law and doing business at Manchester, in the county of Hillsborough, by its directors hereto subscribed, that it is engaged in the generation and sale of electricity, and for that purpose owns and uses certain real and personal property; that it owns all the capital stock of the Manchester Street Railway, a street railway doing business in said Manchester; that the capital stock of your petitioner, as now legally fixed and authorized, is two million, two hundred thousand dollars (\$2,200,000); that by its charter it is empowered to issue its bonds and secure the same by mortgage or trust deed to an amount not exceeding its capital stock; that on April 1, 1901, by its mortgage or trust deed, it conveyed all its property, then or thereafter acquired, to secure an issue of two million dollars (\$2,000,000), face value, of its bonds; that under and by virtue of said mortgage or trust deed it has issued and there are outstanding, on the date hereof, one million, five hundred and nine thousand dollars (\$1,509,000), face value, of its said bonds; that since March 7, 1903, and in accordance with the terms of said mortgage or trust deed, it has issued one hundred forty-four thousand dollars (\$144,000), face value, of its said bonds to retire a like amount of bonds of said Manchester Street Railway, and must on or before January 1, 1905, issue one hundred and six thousand dollars (\$106,000), face value, of its said bonds to retire the total issue of two hundred and fifty thousand dollars (\$250,000), of said Manchester Street Railway

bonds; that said issue of one hundred forty-four thousand dollars (\$144,000) of bonds is included in the said total issue of one million, five hundred and nine thousand dollars (\$1,509,000); that for the purpose of paying for land, buildings, new machinery, electrical apparatus, and other permanent improvements, it is necessary to issue and sell additional two hundred eighteen thousand dollars (\$218,000), face value, of its said bonds; that at a meeting of its directors, held March 17, 1904, said additional issue was authorized to be sold at not less than their face value with accrued interest; and that the proposed issue as set forth in the prayer of this petition, together with the total amount of said bonds heretofore issued, will be within the authorized limit as prescribed by its charter.

Wherefore, your petitioner prays that it may be authorized to issue said two hundred and eighteen thousand dollars (\$218,000), face value, of its said bonds; that the issue of said one hundred and forty-four thousand dollars (\$144,000), face value, of its said bonds issued since March 7, 1903, to retire said Manchester Street Railway bonds, may be authorized, ratified, and confirmed; and that it may be further authorized to issue in addition from time to time one hundred and six thousand dollars (\$106,000), face value, of its bonds to retire a like amount of the Manchester Street Railway bonds maturing January 1, 1905, and for such other relief as may be just.

Dated April 22, 1904.

WILLIAM A. TUCKER,
GEORGE H. HOOD,
WALTER M. PARKER,
GEORGE B. CHANDLER,
R. G. SULLIVAN,
HARRY E. PARKER,
J. BRODIE SMITH,
S. REED ANTHONY,
STILLMAN F. KELLEY,
BILLINGS P. LEARNED,
R. H. HALLOWELL,
CHARLES M. FLOYD,

Directors.

By their Attorneys,

TAGGART, TUTTLE, BURROUGHS & WYMAN.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, April 29, 1904.

In the matter of the petition of the Manchester Traction, Light & Power company asking the approval of the board of the issue of its bonds to the amount of two hundred eighteen thousand dollars (\$218,000), face value, for the purpose of paying for land, buildings, machinery, electrical apparatus, and other permanent improvements, in the purchase of which the company has contracted a floating debt of about that amount, and also asking the approval of the board of the issue of one hundred forty-four thousand dollars (\$144,000), of bonds issued since March 3, 1903, for the purpose of retiring an equal amount of the bonds of the Manchester Street Railway which is owned by said Traction, Light & Power company, and of the issue hereafter of one hundred and six thousand dollars (\$106,000), of bonds to retire that amount of said street railway bonds now outstanding, a hearing was had at the office of Henry M. Putney, at Manchester, April 29, 1904, at 11 o'clock, A. M., and such testimony and arguments as were presented were heard and considered.

It appeared that the petitioning corporation owns the Manchester Street Railway, which had a year ago a bonded indebtedness of two hundred and fifty thousand dollars (\$250,000). That the capital stock of said petitioning corporation as now fixed and authorized is two million two hundred thousand dollars (\$2,200,000), that its outstanding bonds are one million five hundred and nine thousand dollars (\$1,509,000), of which one hundred and forty-four thousand dollars (\$144,000) were recently issued to retire the same amount of Manchester Street Railway bonds, that the company has made extensive additions to and improvements of its property for which it has incurred a floating debt of about two hundred and eighteen thousand dollars (\$218,000), and that it proposes to retire the remaining Manchester Street Railway bonds amounting to one hundred and six thousand dollars (\$106,000).

It is therefore voted and ordered:

That the issue of bonds as stated above is reasonably requisite for the proper purposes of the corporation, and that the board approves the issue of two hundred and eighteen thousand dollars of bonds (\$218,000), for the purpose of paying the floating indebtedness of said company.

Also the issue already made of one hundred and forty-four thousand dollars (\$144,000), for the retirement of that amount

of Manchester Street Railway bonds, and of one hundred and six thousand dollars (\$106,00), for the purpose of retiring the Manchester Street Railway bonds now outstanding, subject to the provisions of law and upon the conditions following: That no more shall be issued than is necessary at par value to pay the actual expense incurred for the purposes for which the issue is authorized, and that said company shall open and keep books of account which will at all times exactly and clearly show what amounts have been expended for the purposes specified.

HENRY M. PUTNEY,
ARTHUR G. WHITTEMORE,
GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

CONCORD STREET RAILWAY, PARK REGULATIONS.

RULES AND REGULATIONS TO BE OBSERVED BY ALL VISITORS AT CONTOOCOOK RIVER PARK.

1. The building of fires within the grounds, cutting, plucking or destroying of trees, plants or shrubs, injury to buildings, marking or defacing trees, fences, posts or seats, throwing missiles at birds or squirrels, discharging firearms, or unnecessarily carrying them about in the park are forbidden.

2. No disorderly or intoxicated person will be allowed on the grounds. Drinking, selling, or having in possession intoxicating liquors on the premises is forbidden.

3. Indulging in indecent, profane, or insulting language or conduct is forbidden.

4. No carriages (except baby carriages) will be allowed in the park. Persons entering the park on bicycles must have them checked at the bicycle shed. Riding about the grounds on bicycles is forbidden.

5. Picnic parties, to whom is assigned a portion of the grounds, must not be annoyed by other visitors.

6. No peddling, games of chance, or begging will be allowed.

Any person violating any of the foregoing rules will be prosecuted in accordance with the provisions of an act passed at the January session, 1897, New Hampshire legislature, entitled "An Act Regulating the Maintenance of Parks, or Pleasure Grounds, by Railroads and Street Railways."

W. F. RAY,
Superintendent.

The foregoing rules and regulations are hereby approved.

June 15, 1904.

HENRY M. PUTNEY,

A. G. WHITTEMORE,

GEORGE E. BALES,

Railroad Commissioners for the State of New Hampshire.

UNCANOONUC INCLINE RAILWAY. LAND DAMAGE.

To the Board of Railroad Commissioners:

Respectfully represents the Uncanoonuc Incline Railway and Development company, a street railway corporation duly organized under an act of the legislature of New Hampshire, approved March 25, 1903; that by its charter it is authorized to construct, maintain, and operate a railway with single or double track with convenient sidings, turnouts, and switches, from a convenient point in the southerly line of the Orr road within the town of Goffstown and within one mile of Shirley Station on the Boston & Maine railroad, over and upon such highways and lands as may be necessary, to some convenient point at the summit of Uncanoonuc Mountain, in said Goffstown; that all parts of said railway occupying any portion of a public highway or street to be located by the selectmen of said Goffstown; that at a meeting of the directors of said corporation, it was voted to petition the selectmen of said Goffstown to build said railway from a point at the junction of the Mast road and Orr road over certain highways and over certain private lands to the summit of Uncanoonuc Mountain, as follows:

"Beginning at a stake at the junction of the Mast road, so called, and the Orr road, so called, at Shirley station in the town of Goffstown, said stake being 39.35 feet westerly from the stone watering trough and 66 feet southwesterly from pole 331 of the Manchester Traction, Light & Power company; thence south $12^{\circ} 30'$ east across the traveled way and along the easterly side of the Orr road, so called, about 672 feet to a point of curve; thence by a curve to the left of 5729.65 feet radius 200 feet to a point of tangent; thence by a tangent south $14^{\circ} 30'$ east about 200 feet to the easterly line of the Orr road, so called, at land of Fred H. Poore; thence on a right of way 50 feet in width on the easterly side of the Orr road, so called, through lands of Fred H. Poore about 645 feet, Shirley and Harriett S. Johnson about 2165 feet, E. C. Shirley, formerly Byron H. Cram's, about 800 feet, Thomas E. Shirley about 765 feet, and Charles F. Gage about 730 feet to the easterly line of the Orr road, so called, at a point about 245 feet northerly of the house of Charles F. Gage;

thence by a curve to the right of 1562.88 feet radius about 265 feet on and across said road to a point of tangent near the westerly side of said road; thence by a tangent south 2° west about 34 feet to the westerly line of said road; thence on a right of way 50 feet in width through lands of Charles F. Gage about 596 feet and Shirley Johnson about 1120 feet to a point of curve near the northerly line of the New Cram road, so called, and about 250 feet easterly of the property line between Shirley Johnson and J. R. Ferson; thence by a curve to the right whose tangent bearing is south 2° west with a radius of 819.02 feet, on and across said road about 350 feet to the southerly line of said road; thence on a right of way 50 feet in width on the southerly side of the New Cram road, so called, through land of J. R. Ferson about 1775 feet to a point in the easterly line of the Old Cram road, so called, about 35 feet southerly of the culvert at the crossing of the brook and said road; thence south $45^{\circ} 30'$ west on and across said road to the westerly line of said road; thence on a right of way 50 feet in width through land of J. Cram heirs about 200 feet to land of the Uncanoonuc Incline Railway and Development company; thence across said last mentioned land about 1650 feet to the base of the Uncanoonuc Mountain; thence by a balanced Incline Railway to the summit of said mountain; the above described line to be the center line of said track and the gauge to be 4 feet $8\frac{1}{2}$ inches."

That a hearing was ordered upon said petition June 11, 1904, at two o'clock in the afternoon at the town hall, in the town of Goffstown, at which time and place the selectmen of said Goffstown voted to lay out so much of said layout contained within the public highways of said Goffstown.

That in order to construct said railway it became necessary to take land of owners as hereinafter set forth, to wit, of Fred H. Poore, of Mrs. Byron H. Cram, of Thomas Shirley, minor; all of said Goffstown; of Mrs. Etta Cram, Georgia Cram, Hattie D. Cram, all of said Goffstown, and Mrs. Helen Charles of Ward Hill, Mass., heirs of Joseph Cram.

That your petitioner has made a return to the office of the secretary of state of the location of said lands to be so taken, as required by law, and that said land to be taken of the said Fred H. Poore is described as follows, to wit:

"Beginning at a point on the line between land of Shirley and Harriett Johnson and Fred H. Poore on the easterly side of the Orr road, so called, and at the southwest corner of the within described premises; thence northerly by the easterly side of Orr road about $776\frac{1}{2}$ feet to the wall at cleared land of Fred H.

Poore; thence easterly by said wall about 50 feet to other land of Fred H. Poore; thence southerly parallel with the first described course, about $776\frac{1}{2}$ feet to land of Shirley and Harriett Johnson, thence westerly by land of Shirley and Harriett Johnson about 50 feet to the bound first mentioned in this description, and containing in all $89/100$ of an acre. Meaning and intending to describe a strip of land 50 feet in width of the sprout land of Fred H. Poore along the easterly side of Orr road."

Said land to be taken of the said Thomas Shirley, minor, is described as follows:

"Beginning at the corner of the wall on the easterly side of Orr road, so called, at the line between land of Mrs. Byron H. Cram and Thomas Shirley; thence northerly by land of Mrs. Byron H. Cram about 175 feet to a point 25 feet easterly of the proposed center line of track of the Uncanoonuc Incline Railway and Development company, as shown on a plan entitled "Plan and Profile of Electric Railway of Uncanoonuc Incline Railway and Development Company from Shirley Station to the base of Uncanoonuc Mountain in Goffstown, N. H." drawn by Frank A. Gay and dated June, 1904; thence southeasterly parallel with said center line of track about 25 feet easterly therefrom about 870 feet to land of Charles F. Gage; thence westerly by land of Charles F. Gage about 65 feet to the easterly side of Orr road; thence northerly by the easterly side of Orr road about 685 feet to the bound first mentioned in this description, containing in all about $141/100$ acres."

Said land to be taken of the said Mrs. Byron H. Cram is described as follows:

"Beginning at a point in the line between land of Shirley and Harriett Johnson and Mrs. Byron H. Cram about 80 feet easterly from the east line of Orr road, so called; thence south $29^{\circ} 12'$ east by other land of Mrs. Byron H. Cram about 715 feet to land of Thomas Shirley; thence southerly by land of Thomas Shirley about 90 feet; thence north $29^{\circ} 12'$ west by other land of Mrs. Byron H. Cram about 830 feet to land of Shirley and Harriett Johnson, thence easterly by land of Shirley and Harriett Johnson about 60 feet to the bound first mentioned in this description, and containing in all about $88/100$ of an acre. Meaning and intending to describe a strip of land 50 feet in width or 25 feet each side of a proposed center line of track as shown on a plan entitled "Plan and Profile of Electric Railway of Uncanoonuc Incline Railway and Development Company from Shirley Station to the base of Uncanoonuc Mountain in Goffstown, N. H.," drawn by Frank A. Gay and Dated June, 1904."

Said land to be taken of the said Mrs. Etta Cram, Georgia Cram, Hattie D. Cram and Mrs. Helen Charles, heirs of Joseph Cram, is described as follows:

"Beginning at a stake and stones on the westerly side of the Old Cram road, so called, at land of the Uncanoonuc Incline Railway and Development company, said stake and stones being the southeast corner of the within described premises; thence westerly by land of the Uncanoonuc Incline Railway and Development company about 250 feet to other land of the said Mrs. Etta Cram, Georgia Cram, Hattie D. Cram, and Mrs. Helen Charles, heirs of Joseph Cram; thence north $45^{\circ} 42'$ east about 250 feet to the westerly side of the Old Cram road; thence southeasterly by Old Cram road about 195 feet to the bound first mentioned in this description, containing in all $46/100$ of an acre."

The said several pieces of land being more fully set forth upon the plan hereto annexed and which is made a part of this petition.

Your petitioner respectfully represents that it has been unable to agree with the said several owners of said tracts of land, and to obtain deeds from them therefor, and it, therefore, applies to your honorable board to appraise the damages to the respective landowners for the taking of the same as provided for in Chapter 158 of the Public Statutes of the State of New Hampshire.

Wherefore, your petitioner prays that you will assess said damages to each of said landowners accordingly.

UNCANOONUC INCLINE RAILWAY AND DEVELOPMENT
COMPANY,

By EDWARD C. SMITH,
Its President.

*To the Town Clerk of Goffstown, in the County of Hillsborough, and
State of New Hampshire:*

Upon the petition of the Uncanoonuc Incline Railway and Development company to the board of railroad commissioners of said state to appraise the damages occasioned to Fred H. Poore, Mrs. Byron H. Cram, Thomas Shirley, minor, Mrs. Etta Cram, Georgia Cram, Hattie D. Cram, and Mrs. Helen Charles, heirs of Joseph Cram, owners of land in said Goffstown taken by said railroad to construct its electric railroad, as described in said petition, said railroad commissioners, upon due procedure, together with the selectmen as a joint board, have made such appraisal, and said commissioners as by law required certify to you the damages to said land owners as awarded by said joint board to be as follows, to wit:

To Fred H. Poore	\$117.00
To Mrs. Byron H. Cram	140.00
To Thomas Shirley, minor	75.00
To be paid to them by said Uncanoonuc Incline Railway and Development company.	

Dated August 24, 1904.

HENRY M. PUTNEY,
ARTHUR G. WHITTEMORE,
GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

To the Honorable Secretary of State of New Hampshire:

Notice of the hearing upon the foregoing petition having been given as appears by the notice and return of service thereon hereto annexed, the board of railroad commissioners and the selectmen of said Goffstown attended according to said appointment, and said board of railroad commissioners and said selectmen being met and constituting a joint board for the appraisal of damages occasioned to Fred H. Poore, Mrs. Byron H. Cram, Thomas Shirley, minor, Mrs. Etta Cram, Georgia Cram, Hattie D. Cram, and Mrs. Helen Charles, heirs of Joseph Cram, owners of land in said Goffstown taken by said Uncanoonuc Incline Railway and Development company to construct its electric railroad, as described in said petition did make examination of said land and hear all parties interested, their witnesses and arguments. And upon consideration thereof said joint board does award the damage to said landowners as follows, to wit:

To Fred H. Poore	\$117.00
To Mrs. Byron H. Cram	140.00
To Thomas Shirley, minor	75.00

To be paid to them by said Uncanoonuc Incline Railway and Development company.

Dated August 24, 1904.

HENRY M. PUTNEY,
ARTHUR G. WHITTEMORE,
GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

GEORGE L. EATON,
WILLIAM H. COLBY,
WILLIAM P. HADLEY,

Selectmen of Goffstown.

PORTSMOUTH & EXETER STREET RAILWAY FARES.

To the Honorable Board of Railroad Commissioners of the State of New Hampshire:

GENTLEMEN:—WHEREAS, The Portsmouth & Exeter Street Railroad, a corporation chartered by the legislature of this state at the session of 1901, to lay its rails and otherwise complete the same, to run from the junction of the Exeter & Hampton Street Railroad at High street and Portsmouth avenue, in Exeter, N. H., through the towns of Stratham and Greenland, to the junction of the Portsmouth Street Railroad at Portsmouth Plains, in Portsmouth, N. H., and to operate its cars upon the same;

AND WHEREAS, The said Portsmouth & Exeter Street Railroad established at its beginning a rate of fares and fare points entirely satisfactory to the traveling public;

AND WHEREAS, The first fare point from Exeter was situated at the junction of Portsmouth avenue and Winnicutt road in Stratham, the second at Greenland Parade, or Village, and the third or final one at the above named terminus at Portsmouth Plains, and on June 1, 1904, the said corporation, against the public good, saw fit to change its fares and fare points, thereby increasing the fare from 15 cents to 20 cents, and so changing the fare points as to make an unjust and improper distribution of fare points in the town of Stratham, thereby placing the fare from Stratham Village to Exeter, a distance of four miles, at 10 cents, there being two fare points within the said town of Stratham, and costing from the northern to the southern portion, a distance of approximately six miles, the sum of 15 cents;

Believing that we should receive equal rights with other towns, the board of selectmen of Stratham, N. H., over their secretary's signature, on June 21, 1904, asked for the abolishing of the present fare and fare points, and the placing of those in use prior to June 1, 1904, again in operation, yet after waiting the stated time of said company for an answer and receiving none, believing the public good endangered by the present fare and fare points:

Wherefore, The undersigned, citizens of Stratham, ask your honorable board for a speedy hearing at Stratham town hall, that you may readjust the present fares and fare points in the

town of Stratham, N. H., that those in use prior to June 1, 1904, may again be placed in operation.

J. C. A. WINGATE,
JOHN N. THOMPSON,
ASA J. CHAPMAN,
FRANK CHAPMAN,
FREDERICK A. CAVERLY,
H. F. MARDEN,
W. G. PARKMAN,
G. W. DIXON,
W. L. MORSE,
WILLIAM ROBY,
JAMES F. ROBY,
ALBERT GOVE,
and 86 others.

To the Honorable Board of Railroad Commissioners of the State of New Hampshire:

GENTLEMEN:—Whereas a change of fares on the Portsmouth & Exeter Street Railroad has increased the fare from Stratham Village to Exeter, a distance of four miles, from 5 cents to 10 cents, believing the public good requires a change to the former fare;

We, the citizens and traders of Exeter, N. H., hereby petition your honorable body to reduce the fare to the former rate, in use prior to June 1, 1904.

Signed,

WEEKS & SEWARD,
THOMAS SMITH,
H. W. ANDERSON,
C. A. LAMPREY,
J. W. FIELD,
D. P. FOSTER,
F. F. BATCHELDER,
JOHN TEMPLETON,
ARTHUR H. SAWYER,
WILLIAM FLANIGAN,
W. P. BARTLETT & CO.,
CHARLES C. RUSSELL,
and 92 others.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, August 5, 1904.

In the matter of the petition of J. C. A. Wingate and ninety-seven other citizens of Stratham, and Weeks & Seward and one hundred and three other firms and citizens of Exeter, complaining that the fares upon the Portsmouth & Exeter Street Railway have been advanced one-third and that the fare points have been changed to the detriment of its patrons and asking that it be ordered to restore the rates and fare points of last year, a hearing was had at the town hall in Stratham Wednesday, August 3, at which the petitioners were represented by D. W. Baker, Esq., of Exeter, and James F. Emery and J. C. A. Wingate of Stratham, and the railroad by Hon. Samuel W. Emery, its counsel, D. A. Belden, its president, and Franklin Woodman, its superintendent, and all statements and arguments offered were heard and considered. The board finds:

The Portsmouth & Exeter Railroad extends from the Plains in Portsmouth to a junction with the Exeter, Hampton & Amesbury in Exeter, a distance of 11.98 miles, but from the beginning it has been given the use of the Exeter, Hampton & Amesbury tracks from the junction to the passenger station of the Boston & Maine railroad in Exeter and has run its cars regularly upon them, making its line 13.087 miles.

It began operation September 11, 1902. Its capital stock is \$165,000 and its bonded debt \$145,000. The cost of the road was \$283,130.57, of its equipment \$29,146.31; of its land and buildings \$68,722.80; and of its office furnishings \$341.43, making a total investment of \$395,291.11. Its gross income from operation from its opening, September 11, 1902, to the end of the railroad year, June 30, 1903, was \$14,848, and its operating expenses were \$24,313.59, a net loss from operation of \$9,465, which added to the interest on its funded debt, \$7,250, makes a deficit of \$16,715. During the winter of 1903-4 that portion of the road between Portsmouth Plains and Greenland was snow bound and was not operated for four weeks to the advantage of the company.

The gross income of the road from operation during the year ending June 30, 1904, was \$18,425.65, and its operating expenses were \$24,899.07, a loss of \$6,473.44. Adding the \$7,250, interest on the funded debt, the deficit was \$13,723.44. Its expense account includes \$7,089.08 for wages of men who run the cars, \$7,184.53 for motive power, \$1,142.40 for removing snow and ice, \$1,109.94 for maintenance of track, \$555.84 for repairs of electric

line and \$3,105.80 for cars and equipment, \$1,350.80 for supplies and \$882.79 for damages.

The road is leased to the Exeter, Hampton & Amesbury, which is owned by the New Hampshire Traction company, a holding corporation that also owns and operates nine other railroads, of which six are in New Hampshire, the Hampton bridge, the Canobie Lake park, the Rockingham Power plant, the Granite State Land company and some other properties.

Its six New Hampshire railroads are the Dover, Somersworth & Rochester, in Strafford county, and the Exeter, Hampton & Amesbury, the Hudson, Pelham & Salem, the Portsmouth & Exeter, and the Seabrook & Hampton beach, in Rockingham county, constituting a seacoast system.

The liabilities of the Traction company were stated in its report, dated June 30, 1903, to be \$9,225,630.24 and its deficit for the year ending at that time \$245,212.75. Its return for the year ending June 30, 1904, has not been received, but we have those of its six New Hampshire railroads, which show a gross income from operation of \$276,420.12, operating expenses amounting to \$261,007.69 in addition to \$6,236.79 park expenses, \$63,227.71, chargeable to the Pelham accident, and interest and taxes to the amount of \$71,319.18, leaving a deficit for the year of \$114,540.70. In 1903 their deficit was \$91,587.73. If the calculation is confined to the five roads constituting the Rockingham county system, the showing for the year is gross receipts \$194,320.70, operating expenses \$199,910.79, fixed charges \$51,707.54, accident \$63,227.71, deficit \$112,179.34.

Summarizing these balances we find that the Portsmouth & Exeter railway had been operated July 1, 21½ months at a loss of \$15,938.62, exclusive of its bonded debt account, which called for \$14,500; that the Traction company to which it belongs, showed a deficit last year of more than \$245,000, which can not be largely reduced by this year's returns; that the Traction railways in New Hampshire, of which the Portsmouth & Exeter is one, show a deficit of \$114,541.70, and the system of which it is a part, a loss of \$68,817.80 from operation including accidents, and a deficit including fixed charges of \$112,179.34.

June 1, 1904, the managers of the New Hampshire Traction company electrics advanced the fares upon their roads about one-third, making, as far as was practicable, the fare points equi-distant from each other, about three and a third miles apart. This advance has since been somewhat modified by the issue of excursion tickets and regular round trip tickets good to the purchaser at any time, but as these concessions do not affect

the rates offered to every one at all times they need not be considered here. The new tariff resulted in this change upon the Portsmouth & Exeter. Previous to its adoption there were three fares of five cents each, or 15 cents, collected upon the 13 miles between the Exeter passenger station and Portsmouth Plains. The raise made four fares, or 20 cents, between these termini, and of course as the aim was to establish them at equidistant locations, changed the fare points.

The contention of the petitioners is, first, that the advance in rates is unwarranted, and secondly, that the fare points should be so fixed that the residents of Stratham village can go to Exeter for a single 5-cent fare. In support of this they allege that this was the understanding when the franchise of the road was granted, that on some other roads people are carried further for five cents than they are on this; that if the business of this road does not pay the cost of transacting it, the loss should be charged to the whole system of which the road is a part and that good policy fixes fare points with reference to communities and not distances. There is no evidence of any such agreement or understanding as is referred to.

With the facts in view the contention of the petitioners that any losses or deficits upon the Portsmouth & Exeter should be distributed over the entire system is of little consequence. Much can not be taken from nothing. Losses on one road can not be collected from the deficits on others. The financial exhibit of the Portsmouth & Exeter is only worse in degree than those of the roads with which it is grouped. It can not expect relief from them. The road is new. It pays no taxes and charges nothing for depreciation. It has its motive power at cost. There is no complaint that its service is excessive and no showing that its expenses can be substantially lessened. Its gross receipts averaged more per month during the first 9½ months of its operation than they have since and we see no reason to expect that they will increase. The hard fact is that there are not people enough who desire to use this road to support it with the same rates of fare that are charged more populous communities and it is doubtful if they will do this with any rates. Fortunately for the citizens of Exeter, Stratham and Greenland, there was miscalculation as to this by those who furnished the capital, and without the expenditure of a dollar the three towns have the road, which as it appears, is solely for their benefit, for it pays no profit to its owners.

We know of no way in which the proprietors of a railroad can be compelled to pay the expense of its operation out of their

own pockets. There are processes perhaps by which their investments in the road can be confiscated or made worthless, but beyond this the law of New Hampshire does not penalize the construction of unprofitable railroads.

It follows that an order requiring this road to carry passengers for less than the actual cost of their transportation would not only be unreasonable but null and void. It would not be approved by the court and could not be enforced. At most, it would force the owners to abandon the road, or to discontinue its operation in winter or reduce its service, which is not what the people of Stratham and Exeter desire. When the change in rates and fare points went into effect last spring the patrons, to some extent, avoided the road with the result that its receipts in June, 1904, were little larger than in June, 1903.

This presents the question whether it would not be better for the road to re-establish its old tariff, but this, in our opinion, is not a question for us. Granting that some way must be devised to increase the income, it is for the managers, who, presumably, know their business much better than we can, to do it or to try to do it as their judgment directs. If they are feeling their way experimenting as they go, results must be trusted to set them right. So far as their patrons are concerned the vital question is whether they can continue to operate the road.

Upon a cross country electric road like this, which runs entirely through farming districts, it seems to us that it is equitable to establish fare points between which one may ride for a nickel at equal distances from each other. If, as is sometimes done, conductors are instructed to allow certain laps, that is, to accept single fares from passengers who take the cars short distances outside these fare points at some places, it can not reasonably be objected to, but that is a matter for the manager to consider. When on such a road A of Stratham has a right to ride the same distance for five cents that B of Greenland and C of Exeter have, he can not justly complain of discrimination. One complaint of the Exeter petitioners is that the change in fare points tends to send Stratham trade away from Exeter. The ready answer of this is that it is not the province of this board to divert trade to or from any place. All the patrons of a road are entitled to reasonable, fair, and equal accommodations, and upon such a road as this, as near equal charges per mile as is practicable. When this is secured to them it is for them to

determine which way they will go and to what place they will carry their patronage.

It is voted and ordered that the petition be dismissed.

HENRY M. PUTNEY,
ARTHUR G. WHITTEMORE,
GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

OPERATION OF LACONIA STREET RAILWAY.

To the Board of Railroad Commissioners of the State of New Hampshire:

We, the undersigned, directors in the Laconia Street Railway, respectfully represent that said street railway from a point on Union avenue, near the residence of the late Samuel C. Clark, in said Laconia, thence northerly to the terminus of said railway at Weirs, so called, in said Laconia, cannot be operated without great loss to the company after October 15th, to the first of May following.

Wherefore, said directors apply to and petition said board of railroad commissioners to authorize them to discontinue the operation of that part of said Street Railway, beginning at a point opposite the dwelling of the late Samuel C. Clark, in Laconia, thence extending northerly to its terminus at Weirs, from and after October 15, 1904, until the first of May, 1905.

Dated at Laconia, N. H., this 15th day of September, 1904.

A. G. FOLSOM,
S. B. SMITH,
EDMUND LITTLE,
CHARLES F. STONE,
Directors.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, September 22, 1904.

The Laconia Street Railway is hereby authorized to discontinue the operation of its railway between a point on Union avenue, near the residence of the late Samuel C. Clark in La-

conia, and the northern terminus at Weirs, from the 15th day of October, 1904, to the first day of May, 1904.

HENRY M. PUTNEY,
ARTHUR G. WHITEMORE,
GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

PETITION FOR STATIONS AT NORTH WALPOLE.

To the Honorable Board of Railroad Commissioners:

The undersigned citizens and taxpayers of the town of Walpole respectfully represent:

That in the village of North Walpole, in said town, there is no stopping place or depot for the convenience of passengers and citizens who may wish to take trains in said village.

That the nearest depot or station is at Bellows Falls, Vt., and that it is more than one mile from said village.

Wherefore, your petitioners pray that your honorable board may order the Sullivan County Railroad company to provide a suitable depot or station in said village of North Walpole and order and direct the said Sullivan County Railroad company and the Boston & Maine Railroad company to stop trains at said station or depot for the accommodation of the residents of said village.

KING & HARTNETT, Merchants,
P. E. GRIFFIN,
WILLIAM GALLAGHER,
GEORGE A. GALE,
JAMES BARRETT,
REV. L. M. WILDE,
E. A. TRACY, M. D.,
WILLIAM LANE,
JOHN McCLUE,
DANIEL W. RILEY,
and forty-three others.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., September 27, 1904.

In the matter of the petition of King & Hartnett and fifty-two other citizens of Walpole, in the county of Cheshire, in said state, asking for an order directing the Sullivan County Railroad to stop its trains at, and erect a passenger station in the village

of North Walpole for the accommodation of residents living at said place.

Due and sufficient notice having been given in accordance with the order of the commissioners, a hearing was had thereon in Russell hall, in said North Walpole, in the county of Cheshire, on Wednesday, September 14, 1904, at nine o'clock in the forenoon, at which time and place several of the petitioners appeared in person, and said railroad was represented by its president, superintendent and engineer. The board having considered the petition, and the evidence produced in support thereof, and having made an examination of the locality, and having heard all persons who desired to be heard upon said petition in relation to the matter of a passenger station at said North Walpole, report as follows:

The village of North Walpole lies along the line of the Sullivan County Railroad and along the easterly bank of the Connecticut river immediately opposite the village of Bellows Falls, in the state of Vermont, said Bellows Falls being the terminus of the Sullivan County Railroad, and the place where a junction is made with the Cheshire branch of the Boston & Maine and the Rutland railroads.

There is no manufacturing business at said North Walpole, and the settlement there is mostly made up of the families of workmen who are employed in the mills at Bellows Falls. It had been the custom of the workmen going to and from work at Bellows Falls, and of other residents, to use the railroad bridge over the Connecticut river, the present highway bridge being nearly a mile down the river. During the year 1903 the railroad, at an expense of from fifty to sixty thousand dollars, abolished the grade crossings in said village, substituting underpasses for the same. The use of the railroad bridge by pedestrians was a source of great danger, and to protect the residents of the village, the proprietors of the railroad caused their right-of-way to be fenced and the use of the bridge discontinued. This fencing of the right-of-way and closing of the railroad bridge as a foot path has compelled the residents, at great inconvenience, to use the lower highway bridge to Bellows Falls, and this change is the primary cause of the petitioners' request for a railroad station.

The town of Walpole has recently voted, in connection with Bellows Falls, to construct, and are now building, a highway bridge across the Connecticut river just north of the present railroad bridge. The work on this bridge is well advanced and it is expected the same will be completed in two or three months,

when the now existing situation will be entirely changed. The New Hampshire end of the new bridge is some two thousand (2,000) feet from the depot in Bellows Falls. This will make the station easily accessible to the inhabitants of North Walpole and gives them access to all the trains of the several railroads that center there.

If a station were established on the New Hampshire side in the village of North Walpole only the local trains of the Sullivan County Railroad would stop there, which road has few local trains, and most of the residents would for convenience continue to use the depot at Bellows Falls. The location of a railroad station at North Walpole would also compel the railroad to open its right-of-way which would neutralize in a large measure the protection the inhabitants now derive from the recent improvements made at so large a cost. When this new bridge is completed a station located in the middle of the village would compel the people of the south end to travel nearly as far to get to it as to the Bellows Falls station and fully as far if located at the north end of the village.

In view of the foregoing facts, the board is of the opinion that the public good does not require the erection of a passenger station at said North Walpole as requested by said petitioners, and order the petition dismissed.

HENRY M. PUTNEY,
ARTHUR G. WHITEMORE,
GEORGE E. BALES,

Railroad Commissioners of New Hampshire.

SEABROOK & HAMPTON BEACH STREET RAILWAY STOCK.

To the Board of Railroad Commissioners of the State of New Hampshire:

The directors of the Seabrook & Hampton Beach Street Railway company respectfully represent: That by the act incorporating said corporation the capital stock thereof is fixed and limited at \$50,000.00; that you have heretofore, upon petition, lawfully authorized the issue of the entire stock authorized by the charter of said corporation, and have authorized an increase of \$5,000.00 of stock of said corporation over and above the amount limited by its charter and have authorized the issue of all the stock aforesaid.

That said corporation now has a floating debt of \$10,000.00 incurred in various ways; that at a meeting of the stockholders

of said Seabrook & Hampton Beach Street Railway company, duly called to consider the question of increasing the capital stock of said corporation by the further sum of \$10,000 beyond the amounts already authorized to be issued by you, which meeting was held at Hampton, New Hampshire, on October 12, 1904, it was voted by more than a majority of the stockholders of said corporation that subject to the approval upon petition of the board of railroad commissioners of said increase, the capital stock of the corporation be increased beyond the amount authorized by the charter and already authorized by you to be issued by the further sum of \$10,000, the same to be divided into 100 shares of the par value of \$100 each.

Wherefore, the petitioners pray, that for the purpose of paying the floating debt of said corporation, and for other lawful purposes, you approve of the increase by said corporation of its capital stock to the extent of \$10,000 beyond the amounts already authorized by you to be issued, and that you authorize the issue of said \$10,000 of capital stock, the proceeds to be used for the purposes aforesaid, and that you make such orders in the premises as may be required by law.

D. A. BELDEN,
F. P. ROYCE,
F. W. STEARNS,
R. H. JOHNSON,
S. W. EMERY,

Directors Seabrook & Hampton Beach Street Railway Company.

By SAMUEL W. EMERY,
Their Attorney.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, November 9, 1904.

In the matter of the petition of the Seabrook & Hampton Beach Street Railway company, asking the approval of the board to the issue of ten thousand dollars of the capital stock of said corporation beyond the amount as now fixed and established.

Due and sufficient notice thereof having been given, a hearing was had upon said petition at the office of the chairman in Manchester on the ninth day of November, 1904, at eleven o'clock in the forenoon, at which hearing the petitioner appeared by its counsel and president, and presented its evidence, statements, and arguments before the board, and no one appeared in opposition to the prayer of the petition.

It appeared to the board, after full investigation and hearing, that said Seabrook & Hampton Beach Street Railway company is authorized by its charter and amendments thereto to issue capital stock to the amount of fifty thousand dollars; that by previous orders of this board said railway was authorized to issue five thousand dollars of its capital stock beyond the amount fixed and limited by its said charter and amendments thereto; that at the present time its capital stock is legally established at fifty-five thousand dollars, all of which has been issued; that the stockholders of said corporation, at a meeting legally called and holden on October 12, 1904, unanimously voted to increase its capital stock to the extent of ten thousand dollars beyond the amount now fixed and established as aforesaid, for the purposes set forth in said petition. It further appeared to the board that since said capital stock was fixed and limited at fifty-five thousand dollars as aforesaid, said corporation has built extensions to its lines, erected overhead construction and added electrical equipment and rolling stock, and has made other permanent improvements, on account of which it now has a floating debt of ten thousand dollars.

Now, therefore, it being deemed and voted by the board, after due consideration of the premises, that the sum of ten thousand dollars in money or the issue of so much capital stock as will realize when issued as hereinafter provided, the sum of ten thousand dollars is reasonably requisite in addition to the sum heretofore authorized to enable said corporation to carry out the purposes as set forth in said petition, so far as the same are hereinafter set forth and approved, it is ordered that the board approve the issue of one hundred shares of capital stock of par value of one hundred dollars each in addition to the capital stock heretofore fixed and limited.

1. It is made a condition of this order that from the proceeds of the sale of said stock the sum of ten thousand dollars shall be applied to the extinguishment of said floating debt incurred for the purposes aforesaid.

2. All of said new shares shall be offered proportionately to the stockholders of the said corporation, giving said stockholders the right to subscribe and pay in cash for the same at not less than the market value thereof, which the board hereby determines to be one hundred dollars (\$100), per share.

3. All shares of stock not subscribed for by the stockholders as aforesaid shall be sold at public auction, either by the brokers' board in the city of Boston, Massachusetts, or at the office of said corporation in the town of Hampton, New Hampshire, as the

directors of said corporation may direct by proper vote. If sold in said Boston, notice of the time and place of sale shall be published in the "Daily Mirror and American," a newspaper published in said Manchester, and in the "Boston Daily Advertiser," and the "Boston Morning Journal," newspapers published in said Boston, five times at least during the ten days immediately preceding the sale. And, if sold in said Hampton, by publication of notice in the same manner in the "Daily Mirror and American," and in the "Exeter News Letter," newspapers published, the first in Manchester, New Hampshire, and the second in Exeter, New Hampshire, and in the "Daily Monitor," a newspaper published in Concord, New Hampshire.

4. No more of the shares of said capital stock hereby authorized shall be issued or sold as aforesaid than will realize the sum of ten thousand dollars in money, and all of said shares shall be issued and sold in accordance with the provisions of law under which the same are issued.

HENRY M. PUTNEY,
A. G. WHITTEMORE,
Railroad Commissioners.

PORTSMOUTH & EXETER STREET RAILWAY STOCK.

To the Board of Railroad Commissioners of the State of New Hampshire:

The directors of the Portsmouth & Exeter Street Railway company respectfully represent: That by the act incorporating said corporation, the capital stock thereof is fixed and limited at \$100,000; that you have heretofore, upon petition, lawfully authorized the issue of the entire stock authorized by the charter of said corporation, and have authorized an increase of \$65,000 of stock of said corporation over and above the amount limited by its charter and have authorized the issue of all the stock aforesaid.

That said corporation now has a floating debt of \$20,000 incurred in various ways; that at a meeting of the stockholders of said Portsmouth & Exeter Street Railway company, duly called to consider the question of increasing the capital stock of said corporation by the further sum of \$20,000 beyond the amounts already authorized to be issued by you, which meeting was held at Hampton, New Hampshire, on October 12, 1904. it was voted by more than a majority of the stockholders of said

corporation that subject to approval, upon petition, of the board of railroad commissioners, of said increase, the capital stock of the corporation be increased beyond the amount authorized by the charter and already authorized by you to be issued by the further sum of \$20,000 the same to be divided into 200 shares of the par value of \$100 each.

Wherefore, the petitioners pray that for the purpose of paying the floating debt of said corporation, and for other lawful purposes, you approve of the increase by said corporation of its capital stock to the extent of \$20,000 beyond the amounts already authorized by you to be issued, and that you authorize the issue of such \$20,000 of capital stock, the proceeds to be used for the purposes aforesaid, and that you make such orders in the premises as may be required by law.

D. A. BELDEN,
F. P. ROYCE,
F. W. STEARNS,
R. H. JOHNSON,
S. W. EMERY,

Directors Portsmouth & Exeter Street Railway Company.

By SAMUEL W. EMERY,
Their Attorney.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, November 9, 1904.

In the matter of the petition of the Portsmouth & Exeter Street Railway company, asking the approval of the board to the issue of twenty thousand dollars of the capital stock of said corporation beyond the amount as now fixed and established:

Due and sufficient notice thereof having been given, a hearing was had upon said petition at the office of the chairman in Manchester on the ninth day of November, 1904, at eleven o'clock in the forenoon, at which hearing the petitioner appeared by its counsel and president, and presented its evidence, statements, and arguments before the board, and no one appeared in opposition to the prayer of the petition.

It appeared to the board, after full investigation and hearing, that said Portsmouth & Exeter Street Railway company is authorized by its charter and amendments thereto to issue capital stock to the amount of one hundred thousand dollars; that by previous orders of this board, said railway was authorized to issue sixty-five thousand dollars of its capital stock beyond

the amount fixed and limited by its said charter and amendments thereto; that at the present time its capital stock is legally established at one hundred sixty-five thousand dollars, all of which has been issued; that the stockholders of said corporation, at a meeting legally called and holden on October 12, 1904, unanimously voted to increase its capital stock to the extent of twenty thousand dollars beyond the amount now fixed and established as aforesaid, for the purposes set forth in said petition. It further appeared to the board that since said capital stock was fixed and limited at one hundred sixty-five thousand dollars as aforesaid, said corporation has built extensions to its lines, erected overhead construction and added electrical equipment and rolling stock, and has made other permanent improvements, on account of which it now has a floating debt of twenty thousand dollars.

Now, therefore, it being deemed and voted by the board, after due consideration of the premises, that the sum of twenty thousand dollars in money or the issue of so much capital stock as will realize when issued as hereinafter provided, the sum of twenty thousand dollars is reasonably requisite in addition to the sum heretofore authorized to enable said corporation to carry out the purposes as set forth in said petition, so far as the same are hereinafter set forth and approved, it is ordered that the board approve the issue of two hundred shares of capital stock of par value of one hundred dollars each in addition to the capital stock heretofore fixed and limited.

1. It is made a condition of this order that from the proceeds of the sale of said stock the sum of twenty thousand dollars shall be applied to the extinguishment of said floating debt incurred for the purposes aforesaid.

2. All of said new shares shall be offered proportionately to the stockholders of the said corporation, giving said stockholders the right to subscribe and pay in cash for the same at not less than the market value thereof, which the board hereby determines to be one hundred dollars (\$100) per share.

3. All shares of stock not subscribed for by the stockholders as aforesaid shall be sold at public auction, either by the brokers' board in the city of Boston, Massachusetts, or at the office of said corporation in the town of Hampton, New Hampshire, as the directors of said corporation may direct by proper vote. If sold in said Boston, notice of the time and place of sale shall be published in the "Daily Mirror and American," a newspaper published in said Manchester, and in the "Boston Daily Advertiser" and the "Boston Morning Journal," newspapers published

in said Boston, five times at least during the ten days immediately preceding the sale. And, if sold in said Hampton, by publication of notice in the same manner in the "Daily Mirror and American," and in the "Exeter News Letter," newspapers published, the first in Manchester, New Hampshire, and the second in Exeter, New Hampshire, and in the "Daily Monitor," a newspaper published in Concord, New Hampshire.

5. No more of the shares of said capital stock hereby authorized shall be issued or sold as aforesaid than will realize the sum of twenty thousand dollars in money, and all of said shares shall be issued and sold in accordance with the provisions of law under which the same are issued.

HENRY M. PUTNEY,
A. G. WHITTEMORE,
Railroad Commissioners.

HUDSON, PELHAM & SALEM STREET RAILWAY STOCK.

To the Board of Railroad Commissioners of the State of New Hampshire:

The directors of the Hudson, Pelham & Salem Electric Railway company respectfully represent: That by the act incorporating said corporation the capital stock thereof is fixed and limited at \$300,000; that you have heretofore, upon petition, lawfully authorized the issue of the entire stock authorized by the charter of said corporation, and have authorized an increase of \$75,000 of stock of said corporation over and above the amount limited by its charter and have authorized the issue of all the stock aforesaid.

That said corporation now has a floating debt of \$100,000 incurred in various ways; that at a meeting of the stockholders of said Hudson, Pelham & Salem Electric Railway company, duly called to consider the question of increasing the capital stock of said corporation by the further sum of \$100,000 beyond the amounts already authorized to be issued by you, which meeting was held at Hampton, New Hampshire, on October 12, 1904, it was voted by more than a majority of the stockholders of said corporation that subject to the approval upon petition of the board of railroad commissioners of said increase the capital stock of the corporation be increased beyond the amount authorized by the charter and already authorized by you to be issued by the further sum of \$100,000, the same to be divided into 1000 shares of par value of \$100 each.

Wherefore, the petitioners pray, that for the purpose of paying the floating debt of said corporation, and for other lawful purposes, you approve of the increase by said corporation of its capital stock to the extent of \$100,000 beyond the amounts already authorized by you to be issued, and that you authorize the issue of such \$100,000 of capital stock, the proceeds to be used for the purposes aforesaid, and that you make such orders in the premises as may be required by law.

D. A. BELDEN,
F. P. ROYCE,
F. W. STEARNS,
R. H. JOHNSON,
S. W. EMERY,

Directors Hudson, Pelham & Salem Electric Railway Company.

By SAMUEL W. EMERY,
Their Attorney.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, November 9, 1904.

In the matter of the petition of the Hudson, Pelham & Salem Electric Railway, asking the approval of the board to the issue of one hundred thousand dollars of the capital stock of said corporation beyond the amount as now fixed and established.

Due and sufficient notice thereof having been given, a hearing was had upon said petition at the office of the chairman in Manchester on the ninth day of November, 1904, at eleven o'clock in the forenoon, at which hearing the petitioner appeared by its counsel and president and presented its evidence, statements, and arguments before the board, and no one appeared in opposition to the prayer of the petition.

It appeared to the board, after full investigation and hearing, that said Hudson, Pelham & Salem Electric Railway is authorized by its charter and amendments thereto to issue capital stock to the amount of three hundred thousand dollars; that, by previous orders of this board, said railway was authorized to issue seventy-five thousand dollars of its capital stock beyond the amount fixed and limited by its said charter and amendments thereto; that the present time its capital stock is legally established at three hundred seventy-five thousand dollars, all of which has been issued; that the stockholders of said corporation, at a meeting legally called and holden on October 12, 1904, unanimously voted to increase its capital stock to the extent of one

thousand shares (one hundred thousand dollars), beyond the amount now fixed and established as aforesaid, for the purposes set forth in said petition. It further appeared to the board that since said capital stock was fixed and limited at three hundred seventy-five thousand dollars as aforesaid, said corporation has built extensions to its lines, erected overhead construction and added electrical equipment and rolling stock, and has made other permanent improvements, on account of which it now has a floating debt of one hundred thousand dollars.

Now, therefore, it being deemed and voted by the board, after due consideration of the premises, that the sum of one hundred thousand dollars in money or the issue of so much capital stock as will realize when issued as hereinafter provided, the sum of one hundred thousand dollars is reasonably requisite in addition to the sum heretofore authorized to enable said corporation to carry out the purposes as set forth in said petition, so far as the same are hereinafter set forth and approved, it is ordered that the board approve the issue of one thousand shares of capital stock of par value of one hundred dollars each in addition to the capital stock heretofore fixed and limited.

1. It is made a condition of this order that from the proceeds of the sale of said stock the sum of one hundred thousand dollars shall be applied to the extinguishment of said floating debt incurred for the purposes aforesaid.

2. All of said new shares shall be offered proportionately to the stockholders of said corporation, giving said stockholders the right to subscribe and pay in cash for the same at not less than the market value thereof, which the board hereby determines to be one hundred dollars (\$100) per share.

3. All shares of stock not subscribed for by the stockholders as aforesaid shall be sold at public auction, either by the brokers' board in the city of Boston, Massachusetts, or at the office of said corporation in the town of Hampton, New Hampshire, as the directors of said corporation may direct by proper vote. If sold in said Boston, notice of the time and place of sale shall be published in the "Daily Mirror and American," a newspaper published in said Manchester, and in the "Boston Daily Advertiser," and the "Boston Morning Journal," newspapers published in said Boston, five times at least during the ten days immediately preceding the sale. And, if sold in said Hampton, by publication of notice in the same manner in the "Daily Mirror and American" and in the "Exeter News Letter," newspapers published, the first in Manchester, New Hampshire, and the second in Exeter, New Hampshire, and in the "Daily Monitor," a newspaper published in Concord, New Hampshire.

4. No more of the shares of said capital stock hereby authorized shall be issued or sold as aforesaid than will realize the sum of one hundred thousand dollars in money, and all of said shares shall be issued and sold in accordance with the provisions of law under which the same are issued.

HENRY M. PUTNEY,

A. G. WHITTEMORE,

Railroad Commissioners.

HAVERHILL, PLAISTOW & NEWTON STREET RAILWAY
STOCK.

To the Board of Railroad Commissioners of the State of New Hampshire:

The directors of the Haverhill, Plaistow & Newton Street Railway company respectfully represent: That by the act incorporating said corporation, the capital stock thereof is fixed and limited at \$100,000, that you have heretofore, upon petition, lawfully authorized the issue of the entire stock authorized by the charter of said corporation, and have authorized an increase of \$60,000 of stock of said corporation over and above the amount limited by its charter and have authorized the issue of all the stock aforesaid.

That said corporation now has a floating debt of \$65,000, incurred in various ways; that at a meeting of the stockholders of said Haverhill, Plaistow & Newton Street Railway company, duly called to consider the question of increasing the capital stock of said corporation by the further sum of \$65,000 beyond the amounts already authorized to be issued by you, which meeting was held at Hampton, New Hampshire, on October 12, 1904, it was voted by more than a majority of the stockholders of said corporation that subject to the approval upon petition of the board of railroad commissioners of said increase, the capital stock of the corporation be increased beyond the amount authorized by the charter and already authorized by you to be issued by the further sum of \$65,000, the same to be divided into 650 shares of the par value of \$100 each.

Wherefore, the petitioners pray that for the purpose of paying the floating debt of said corporation, and for other lawful purposes, you approve of the increase by said corporation of its capital stock to the extent of \$65,000 beyond the amounts already authorized by you to be issued, and that you authorize the issue of such \$65,000 of capital stock, the proceeds to be used for the

purposes aforesaid, and that you make such orders in the premises as may be required by law.

D. A. BELDEN,
F. P. ROYCE,
F. W. STEARNS,
R. H. JOHNSON,
S. W. EMERY,

Directors Haverhill, Plaistow & Newton Street Railway Company.

By SAMUEL W. EMERY,

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, November 9, 1904.

In the matter of the petition of the Haverhill, Plaistow & Newton Street Railway company, asking the approval of the board to the issue of sixty-five thousand dollars of the capital stock of said corporation beyond the amount as now fixed and established;

Due and sufficient notice thereof having been given, a hearing was had upon said petition at the office of the chairman in Manchester on the ninth day of November, 1904, at eleven o'clock in the forenoon, at which hearing the petitioner appeared by its counsel and president, and presented its evidence, statements, and arguments before the board, and no one appeared in opposition to the prayer of the petition.

It appeared to the board, after full investigation and hearing, that said Haverhill, Plaistow & Newton Street Railway company is authorized by its charter and amendments thereto to issue capital stock to the amount of one hundred thousand dollars; that, by previous orders of this board, said railway was authorized to issue sixty thousand dollars of its capital stock beyond the amount fixed and limited by its said charter and amendments thereto; that at the present time its capital stock is legally established at one hundred sixty thousand dollars, all of which has been issued; that the stockholders of said corporation, at a meeting legally called and holden on October 12, 1904, unanimously voted to increase its capital stock to the extent of sixty-five thousand dollars beyond the amount now fixed and established as aforesaid, for the purposes set forth in said petition. It further appeared to the board that since said capital stock was fixed and limited at one hundred sixty thousand dollars as aforesaid, said corporation has built extensions to its

lines, erected overhead construction and added electrical equipment and rolling stock, and has made other permanent improvements, on account of which it now has a floating debt of sixty-five thousand dollars.

Now, therefore, it being deemed and voted by the board, after due consideration of the premises, that the sum of sixty-five thousand dollars in money or the issue of so much capital stock as will realize when issued as hereinafter provided, the sum of sixty-five thousand dollars is reasonably requisite in addition to the sum heretofore authorized to enable said corporation to carry out the purposes as set forth in said petition, so far as the same are hereinafter set forth and approved, it is ordered that the board approve the issue of six hundred fifty shares of capital stock of par value of one hundred dollars each in addition to the capital stock heretofore fixed and limited.

1. It is made a condition of this order that from the proceeds of the sale of said stock the sum of sixty-five thousand dollars shall be applied to the extinguishment of said floating debt incurred for the purposes aforesaid.

2. All of said new shares shall be offered proportionately to the stockholders of the said corporation, giving said stockholders the right to subscribe and pay in cash for the same at not less than the market value thereof, which the board hereby determines to be one hundred dollars (\$100) per share.

3. All shares of stock not subscribed for by the stockholders as aforesaid shall be sold at public auction, either by the brokers' board in the city of Boston, Massachusetts, or at the office of said corporation in the town of Hampton, New Hampshire, as the directors of said corporation may direct by proper vote. If sold in said Boston, notice of the time and place of sale shall be published in the "Daily Mirror and American," a newspaper published in said Manchester, and in the "Boston Daily Advertiser," and the "Boston Morning Journal," newspapers published in said Boston, five times at least during the ten days immediately preceding the sale. And, if sold in said Hampton, by publication of notice in the same manner in the "Daily Mirror and American," and in the "Exeter News Letter," newspapers published, the first in Manchester, New Hampshire, and the second in Exeter, New Hampshire, and in the "Daily Monitor," a newspaper published in Concord, New Hampshire.

4. No more of the shares of said capital stock hereby authorized shall be issued or sold as aforesaid than will realize the sum of sixty-five thousand dollars in money, and all of said shares

shall be issued and sold in accordance with the provisions of the law under which the same are issued.

HENRY M. PUTNEY,

A. G. WHITTEMORE,

Railroad Commissioners.

DOVER, SOMERSWORTH & ROCHESTER STREET RAILWAY
STOCK.

To the Board of Railroad Commissioners of the State of New Hampshire:

The directors of the Dover, Somersworth & Rochester Street Railway company respectfully represent: That by the act incorporating said corporation, the capital stock thereof is fixed and limited at \$300,000; that you have heretofore, upon petition, lawfully authorized the issue of the entire stock authorized by the charter of said corporation.

That said corporation now has a floating debt of \$75,000 incurred in various ways; that at a meeting of the stockholders of said Dover, Somersworth & Rochester Street Railway company, duly called to consider the question of increasing the capital stock of said corporation by the further sum of \$75,000 beyond the amount already authorized to be issued by you, which meeting was held at Hampton, New Hampshire, on October 12, 1904, it was duly voted by more than a majority of the stockholders of said corporation that subject to the approval upon petition of the board of railroad commissioners of said increase the capital stock of the corporation be increased beyond the amount authorized by the charter and already authorized by you to be issued by the further sum of \$75,000, the same to be divided into 750 shares of the par value of \$100 each.

Wherefore, the petitioners pray, that for the purpose of paying the floating debt of said corporation, and for other lawful purposes, you approve of the increase by said corporation of its capital stock to the extent of \$75,000 beyond the amount already authorized by you to be issued, and that you authorize the issue of such \$75,000 of capital stock, the proceeds to be used for the purposes aforesaid, and that you make such orders in the premises as may be required by law.

D. A. BELDEN.

F. P. ROYCE.

F. W. STEARNS.

R. H. JOHNSON,

S. W. EMERY.

Directors of Dover, Somersworth & Rochester Street Railway Company.

By SAMUEL W. EMERY,

Their Attorney.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, November 9, 1904.

In the matter of the petition of the Dover, Somersworth & Rochester Street Railway company, asking the approval of the board to the issue of seventy-five thousand dollars of the capital stock of said corporation beyond the amount as now fixed and established:

Due and sufficient notice thereof having been given, a hearing was had upon said petition at the office of the chairman in Manchester on the ninth day of November, 1904, at eleven o'clock in the forenoon, at which hearing the petitioner appeared by its counsel and president, and presented its evidence, statements, and arguments before the board, and no one appeared in opposition to the prayer of the petition.

It appeared to the board, after full investigation and hearing, that said Dover, Somersworth & Rochester Street Railway company is authorized by its charter and amendments thereto to issue capital stock to the amount of three hundred thousand dollars; that, by previous orders of this board, said railway was authorized to issue three hundred thousand dollars of its capital stock; that at the present time its capital stock is legally established at three hundred thousand dollars, all of which has been issued; that the stockholders of said corporation, at a meeting legally called and holden on October 12, 1904, unanimously voted to increase its capital stock to the extent of seventy-five thousand dollars beyond the amount now fixed and established as aforesaid, for the purposes set forth in said petition. It further appeared to the board that since said capital stock was fixed and limited at three hundred thousand dollars as aforesaid, said corporation has built extensions to its lines, erected overhead construction and added electrical equipment and rolling stock, and has made other permanent improvements, on account of which it now has a floating debt of seventy-five thousand dollars.

Now, therefore, it being deemed and voted by the board, after due consideration of the premises, that the sum of seventy-five thousand dollars in money, or the issue of so much capital stock as will realize when issued as hereinafter provided, the sum of seventy-five thousand dollars, is reasonably requisite in addition to the sum heretofore authorized to enable said corporation to carry out the purposes as set forth in said petition, so far as the same are hereinafter set forth and approved, it is ordered

that the board approve the issue of seven hundred fifty shares of capital stock of par value of one hundred dollars each in addition to the capital stock heretofore fixed and limited.

1. It is made a condition of this order that from the proceeds of the sale of said stock the sum of seventy-five thousand dollars shall be applied to the extinguishment of said floating debt incurred for the purposes aforesaid.

2. All of said new shares shall be offered proportionately to the stockholders of the said corporation, giving said stockholders the right to subscribe and pay in cash for the same at not less than the market value thereof which the board hereby determines to be one hundred dollars (\$100) per share.

3. All shares of stock not subscribed for by the stockholders as aforesaid shall be sold at public auction either by the brokers' board in the city of Boston, Massachusetts, or at the office of said corporation in the town of Hampton, New Hampshire, as the directors of said corporation may direct by proper vote. If sold in said Boston, notice of the time and place of sale shall be published in the "Daily Mirror and American," a newspaper published in said Manchester, and in the "Boston Daily Advertiser" and the "Boston Morning Journal," newspapers published in said Boston, five times at least during the ten days immediately preceding the sale. And, if sold in said Hampton, by publication of notice in the same manner in the "Daily Mirror and American" and in the "Exeter News Letter," newspapers published, the first in Manchester, New Hampshire, and the second in Exeter, New Hampshire, and in the "Daily Monitor," a newspaper published in Concord, New Hampshire.

4. No more of the shares of said capital stock hereby authorized shall be issued or sold as aforesaid than will realize the sum of seventy-five thousand dollars in money, and all of said shares shall be issued and sold in accordance with the provisions of law under which the same are issued.

HENRY M. PUTNEY,

A. G. WHITTEMORE,

Railroad Commissioners.

EXETER, HAMPTON & AMESBURY STREET RAILWAY
STOCK.

To the Board of Railroad Commissioners of the State of New Hampshire:

The directors of the Exeter, Hampton & Amesbury Street Railway company respectfully represent: That by the act incorporat-

ing said corporation, the capital stock thereof is fixed and limited at \$250,000; that you have heretofore, upon petition, lawfully authorized the issue of the entire stock authorized by the charter of said corporation and have authorized an increase of \$25,000 of stock of said corporation over and above the amount limited by its charter and have authorized the issue of all the stock aforesaid.

That said corporation now has a floating debt of \$85,000 incurred in various ways; that at a meeting of the stockholders of said Exeter, Hampton & Amesbury Street Railway company, duly called to consider the question of increasing the capital stock of said corporation by the further sum of \$85,000 beyond the amounts already authorized to be issued by you, which meeting was held at Hampton, New Hampshire, on October 12, 1904, it was voted by more than a majority of the stockholders of said corporation that subject to the approval upon petition of the board of railroad commissioners of said increase the capital stock of the corporation be increased, beyond the amount authorized by the charter and already authorized by you to be issued, by the further sum of \$85,000, the same to be divided into 850 shares of the par value of \$100 each.

Wherefore, the petitioners pray, that for the purpose of paying the floating debt of said corporation, and for other lawful purposes, you approve of the increase by said corporation of its capital stock to the extent of \$85,000 beyond the amounts already authorized by you to be issued, and that you authorize the issue of such \$85,000 of capital stock, the proceeds to be used for the purposes aforesaid, and that you make such orders in the premises as may be required by law.

D. A. BELDEN,
F. P. ROYCE,
F. W. STEARNS,
R. H. JOHNSON,
S. W. EMERY,

Directors Exeter, Hampton & Amesbury Street Railway Company.

By SAMUEL W. EMERY,
Their Attorney.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, November 9, 1904.

In the matter of the petition of the Exeter, Hampton & Amesbury Street Railway company, asking the approval of the board

to the issue of eighty-five thousand dollars of the capital stock of said corporation beyond the amount as now fixed and established;

Due and sufficient notice thereof having been given, a hearing was had upon said petition at the office of the chairman in Manchester on the ninth day of November, 1904, at eleven o'clock in the forenoon, at which hearing the petitioner appeared by its counsel and president, and presented its evidence, statements, and arguments before the board, and no one appeared in opposition to the prayer of the petition.

It appeared to the board, after full investigation and hearing that said Exeter, Hampton & Amesbury Street Railway company is authorized by its charter and amendments thereto to issue capital stock to the amount of two hundred twenty-five thousand dollars, that by previous orders of this board, said railway was authorized to issue fifty thousand dollars of its capital stock beyond the amount fixed and limited by its said charter and amendments thereto; that at the present time its capital stock is legally established at two hundred seventy-five thousand dollars all of which has been issued; that the stockholders of said corporation, at a meeting legally called and holden on October 12, 1904, unanimously voted to increase its capital stock to the extent of eighty-five thousand dollars beyond the amount now fixed and established as aforesaid for the purposes set forth in said petition. It further appeared to the board that since said capital stock was fixed and limited at two hundred seventy-five thousand dollars as aforesaid, said corporation has built extensions to its lines, erected overhead construction and added electrical equipments and rolling stock, and has made other permanent improvements, on account of which it now has a floating debt of eighty-five thousand dollars.

Now, therefore, it being deemed and voted by the board, after due consideration of the premises, that the sum of eighty-five thousand dollars in money or the issue of so much capital stock as will realize when issued as hereinafter provided, the sum of eighty-five thousand dollars is reasonably requisite in addition to the sum heretofore authorized to enable said corporation to carry out the purposes as set forth in said petition, so far as the same are hereinafter set forth and approved, it is ordered that the board approve the issue of eight hundred fifty shares of capital stock of par value of one hundred dollars each in addition to the capital stock heretofore fixed and limited.

1. It is made a condition of this order that from the proceeds of the sale of said stock the sum of eighty-five thousand dollars

shall be applied to the extinguishment of said floating debt incurred for the purposes aforesaid.

2. All of said new shares shall be offered proportionately to the stockholders of the said corporation, giving said stockholders the right to subscribe and pay in cash for the same at not less than the market value thereof, which the board hereby determines to be one hundred dollars (\$100) per share.

3. All shares of stock not subscribed for by the stockholders as aforesaid shall be sold at public auction, either by the brokers' board in the city of Boston, Massachusetts, or at the office of said corporation in the town of Hampton, New Hampshire, as the directors of said corporation may direct by proper vote. If sold in said Boston, notice of the time and place of sale shall be published in the "Daily Mirror and American," a newspaper published in said Manchester, and in the "Boston Daily Advertiser" and the "Boston Morning Journal," newspapers published in said Boston, five times at least during the ten days immediately preceding the sale. And, if sold in said Hampton, by publication of notice in the same manner in the "Daily Mirror and American" and in the "Exeter News Letter," newspapers published, the first in Manchester, New Hampshire, and the second in Exeter, New Hampshire, and in the "Daily Monitor," a newspaper published in Concord, New Hampshire.

4. No more of the shares of said capital stock hereby authorized shall be issued or sold as aforesaid than will realize the sum of eighty-five thousand dollars in money, and all of said shares shall be issued and sold in accordance with the provisions of law under which the same are issued.

HENRY M. PUTNEY,

A. G. WHITTEMORE,

Railroad Commissioners.

OPERATION OF EXETER, HAMPTON & AMESBURY STREET RAILWAY.

To the Board of Railroad Commissioners of New Hampshire:

The Exeter, Hampton & Amesbury Street Railway company and the Seabrook & Hampton Beach Street Railway company respectfully represent that the Exeter, Hampton & Amesbury Street Railway company is now operating under a lease thereof, as part of its line of street railway, the said Seabrook & Hampton Beach Street Railway company's railway extending from the square at Smithtown, N. H., to the terminus of the Exeter, Hampton & Amesbury Street Railway company's railway on

Hampton Beach; that the portion of said street railway line above described which extends from the square at Smithtown, N. H., to the northerly end of the bridge over Hampton river cannot be operated from November 1, 1904, to April 1, 1905. Wherefore, the petitioners pray that you authorize the lessee to discontinue the operation of said part of said railway for the period aforesaid.

EXETER, HAMPTON & AMESBURY STREET RAILWAY
COMPANY.

SEABROOK & HAMPTON BEACH STREET RAILWAY
COMPANY.

By SAMUEL W. EMERY,
Their Attorney.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., November 9, 1904.

The Exeter, Hampton & Amesbury Street Railway company, lessee of the Seabrook & Hampton Beach Street Railway, having petitioned the board for authority to discontinue the operation of a portion of its road extending from the square at Smithtown (a part of Seabrook), in the state of New Hampshire, through South Seabrook (so called), in said Seabrook, and over Seabrook Beach (so called), and over Hampton river bridge to the northerly end of said bridge during the winter months, and having satisfied the board that such portion of the road cannot be operated without heavy loss in the winter, said company is hereby authorized to discontinue the running of its cars from November 1, 1904, to April 1, 1905.

HENRY M. PUTNEY,
A. G. WHITTEMORE,
Railroad Commissioners.

OPERATION OF DOVER, SOMERSWORTH & ROCHESTER
STREET RAILWAY.

To the Board of Railroad Commissioners of New Hampshire:

The Exeter, Hampton & Amesbury Street Railway company, lessee of the Dover, Somersworth & Rochester Street Railway company, respectfully represent, that a part of the railway of said lessor, which is now operated by the lessee, comprising all that portion of the railway lying northerly of and beyond Central Square in the city of Rochester, New Hampshire, cannot be

operated from November 1, 1904, to June 1, 1905, without loss to the corporation operating it. Wherefore, the petitioners pray that you authorize them to discontinue the operation of all that part of said railway extending northerly of Central square in the city of Rochester from November 1, 1904, to June 1, 1905.

EXETER, HAMPTON & AMESBURY STREET RAILWAY
COMPANY.

DOVER, SOMERSWORTH & ROCHESTER STREET RAILWAY
COMPANY.

By SAMUEL W. EMERY,
Their Attorney.

To the Railroad Commissioners of the State of New Hampshire:

Respectfully represents the undersigned mayor and council of the city of Rochester, and citizens thereof, that the Dover, Somersworth & Rochester Street Railway company has reduced the service of its cars for public travel on its lines from Dover and Somersworth to Central square in said Rochester from half hour service to one hour service; that said company has reduced the service of its cars from Central square around its loop in said city from half hour service between the hour of six A. M., to ten P. M., to one hour service from six A. M., to six P. M., that said railway company has now filed a petition to your honorable board for permission to discontinue altogether for the winter season the operation of its roads in certain sections and upon certain of the principal streets of said city.

That the line running from Gonic in said city to Central square accommodates the travel of some one thousand five hundred citizens living in said Gonic, and some five thousand people living in the central portion of the city; that said loop line of said road accommodates the travel of some two thousand five hundred people to and from the center of our city and in making connection with the cars running to said Gonic, Dover, and Somersworth.

Your petitioners represent that said railway company is bound by its charter and the laws of said state to furnish the public with reasonable accommodations for travel over its lines; that reasonable accommodation for said travel requires half hour service of the cars of said company on our principal streets, to wit, from Gonic in said city to Central square and around said loop during the hours from six A. M., to ten P. M.; that the citizens of Rochester have filed their petitions with the proprietors of said railway asking for said service but said company has ignored said petitions and is violating and neglecting

to comply with the law of the state in respect to railroads, requiring it to furnish the public with said reasonable accommodations for travel over its said lines.

Wherefore, your petitioners complain that said road is not operated according to law and pray that the petition of said railway company may be dismissed and that your honorable board may require said street railway company to furnish said reasonable accommodations for public travel over its said lines within our city by running its cars between said points daily every half hour between said hours of six A. M., and ten P. M., connecting hourly with cars from said Dover and Somersworth; that your honorable board give notice in writing to the proprietors of said railway of the violation and neglect of said railway company to comply with the law of our state in respect to railroads and if said violation or neglect shall continue after said notice that your honorable board present the facts to the attorney general of our state or institute and prosecute in behalf and at the expense of the state suitable proceedings in our courts to insure compliance with the laws and secure to the people of Rochester said reasonable accommodations for the public travel over the lines of said company.

Dated at Rochester, this 16th day of November, A. D. 1904.

C. W. BICKFORD, Mayor,
O. A. HOYT,
CHARLES M. BAILEY,
JOHN McCUDDY,
ALBERT CARON,
ABEL DUPERRY,
FRANK B. MAGUIRE,
ALEX H. DURGIN,
JOSEPH O. HAYES,
GEORGE A. ELLIOTT,
S. G. B. SCREETON,
S. C. MEADER,
A. ROSCOE TUTTLE,
WM. A. OSBORNE,
C. E. RICKER,
ALBERT WALLACE,
H. L. WORCESTER, City Clerk,
City Council of said Rochester.
E. S. STUART,
I. SALINGER & CO.
BERRY & SHOREY.

G. M. SHAW & CO.
WILDER B. NEAL & CO.
HENRY F. WALKER.
C. A. DAVIS,
ROBERT V. SWEET,
CHARLES E. WOODWARD.
JOHN S. SANDS.
LOTHROPS, FARNHAM CO.
C. W. F. WENDALL.
C. C. SHAW.
CLARENCE E. JUNKINS.
E. F. COBB.
JOHN M. HUBBARD'S
Spot Cash Shoe Store.
P. H. HARTIGAN,
JOHN F. QUINLAN.
SALINGER BROTHERS.
CHARLES S. BAKER.
SUMNER WALLACE.
R. D. W. BURNHAM.
F. I. RICHARDS.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, November 22, 1904.

In the matter of the petition of the Exeter, Hampton & Amesbury Street Railroad, lessee of the Dover, Somersworth & Rochester Street Railway, for authority to discontinue the operation of that part of its railway in the city of Rochester, N. H., extending north of Central square, from November 1, 1904, to June 1, 1905, and in the matter of the petition of the mayor and city councils and citizens of said Rochester for additional car service on its lines in said city on said loop and on its main line to Gonic Village in said city.

Due and sufficient notice having been given of the petition of said railroad, and service of the petition of said mayor and councils having been accepted by the attorney of said railroad, both petitions were heard together, and the hearing of said petitions was held at the city council rooms in said Rochester, on the 17th day of November, 1904, at which time and place said railroad was represented by its counsel, Hon. Samuel W. Emery, and its president, Hon. D. A. Belden, and the said city of Rochester by its solicitor, Hon. Samuel D. Folker, and the citizens of said Rochester by Leslie P. Snow, Esq.; and the board having considered the petitions and the evidence produced in support thereof, and having made an examination of that part of the railroad which said petitioners asked to be discontinued, and having heard all persons who desired to be heard upon said petitions in relation to the matters contained therein, report as follows:

In the summer of 1901 was constructed that part of the Dover, Somersworth & Rochester Street Railway extending from the Y, so called, at Gage's Hill in Dover, through Gonic village, Central square to Strafford square in said Rochester, with a loop extending west of Strafford square to the fair grounds in said city. During the summer months, it has been the custom of the managers of the Dover, Somersworth & Rochester Street Railroad to give half-hour service on all the lines of its railroad embraced in this system excepting the loop, known as the fair grounds loop, which is run only during the week of the Rochester fair. During the winter months from the Y at Gage's Hill in Dover, through Gonic, and to Central square, Rochester, the schedule has been hourly and the loop at Rochester north of Central square has been discontinued. The petitioners contend that the

managers of the road should operate a car independent of its through service to Dover around the loop to the village of Gonic, in said Rochester, the same to run so as to give Gonic village and residents on the loop half-hour service.

Mr. Belden, president of the road, submitted the following figures, showing the operation of one car between Gonic and Strafford square from April 18 to May 27, 1904, 40 days.

This car made hourly trips, which in connection with the Dover car furnished half hourly service between Strafford square and Gonic, between the hours of 7 A. M. and 8 P. M.

Number of hours in service each day	13
Number of trips per day	26

EARNINGS.

Cash fares between Gonic and Strafford square	\$207.35
Tickets (school), between Gonic and Strafford square..	5.70
Cash fares between Central square and Strafford square	33.75
Tickets (school), between Central square and Strafford square .....	.95
Total	\$247.75
Average per day	6.20

EXPENSES.

Motormen and conductors, per day	\$5.85
Power at 35 cents per hour	4.55
Maintenance equipment at \$1 per day	1.00
	<hr/> 11.40
Actual loss per day	\$5.20

Number of passengers transferred from Dover-Rochester car to this car	466
Average per day	11½
(Less than one passenger per trip.)	

He also submitted the cost of running a car connecting hourly with the Dover-Rochester car at Central square, and operating from Central square to Strafford square and around the loop, from October 10 to November 15, 1904, 37 days.

Operates between 6 A. M. and 6 P. M.

Number of hours in service each day	12
Number of trips each day	24

EARNINGS.

Cash fares, 37 days	\$21.50
Average per day .....	.57½
Average per trip .....	.024
Number passengers per day transferred from Dover car to this car	141½
Average per connection	1.2
Number passengers per day transferred from this car to Dover car	22½
Average per connection	1.8

EXPENSES.

One car man 12 hours, at 22½c.....	\$2.70
Power and heat 12 hours, at 30c.....	3.60
Maintenance of equipment at \$1 per day	1.00
	<hr/>
	\$7.30
Actual loss per day	6.72

Notes:

(1.) This car is operated by only one man to save expenses; if a conductor were used the loss would be over \$9.00 per day.

(2.) No expenses are calculated for account of moving snow, clearing tracks, etc., during the winter.

From analysis of the foregoing statements it is apparent that a car run as the petitioners request would not begin to earn actual running expenses, say nothing about interest on cost of road and wear and tear of equipment and expense of removing snow. The statute under which the petition of said railroad is filed provides that: "The railroad commissioners, upon application, shall have the power to authorize any street railroad company to discontinue the operation of any part of its road during such portion of the year as they may deem expedient, whenever it shall appear that the same cannot be operated without loss to the company." It is apparent that said loop cannot be operated without loss to the corporation, and that if said loop on the main line west of Strafford square was discontinued the citizens living in that section would be partially accommodated by having the hourly service continued to Strafford square, as the same could be operated to the square at a small additional expense to the railroad company by running the car that now stops at Central square through to Strafford square. This arrangement would allow for a fifteen minute running time between Gonic and Strafford square, a distance of about three miles, which seems to be reasonably sufficient.

In accordance with the foregoing facts, the board is satisfied that such portion of the Dover, Somersworth & Rochester Street Railway cannot be operated without loss in winter, and it is authorized to discontinue the running of its cars from December 1, 1904, to May 1, 1905, upon that part of the loop, so called, beyond Strafford square.

Considering the fact that this street railroad barely earns its fixed charges, the board (had it the legal authority) would not consider it a reasonable exercise of such authority to interfere in its management by ordering half hour service in place of hourly, as hourly service in view of the patronage seems to us to furnish the patrons of the road reasonable accommodations, and the petition of said mayor and city councils is dismissed.

HENRY M. PUTNEY,
ARTHUR G. WHITEMORE,
Railroad Commissioners.

PART V.

ACCIDENTS.

ACCIDENTS.

DEATH OF THOMAS McCaffrey.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, January 4, 1904.

Inquest held at Portsmouth, September 19, 1903.

Witnesses: Clarence H. Knowles, North Hampton, N. H.; James Davidson, Portsmouth, N. H.; John H. Brown, North Hampton, N. H.; George E. Perkins, track walker Boston & Maine railroad, North Hampton, N. H.; Mrs. Mary J. Taylor, North Hampton, N. H.; Mrs. Mary Gay, North Hampton, N. H.; Walter H. Remick, motorman, Rye, N. H.; Howard E. Oxford, conductor, Portsmouth, N. H.

Thomas McCaffrey, a farm hand in the employ of George E. Dalton, of North Hampton, was run over and killed by an electric car in that town, Sunday, September 13, 1903, at 7.50 o'clock in the evening.

He had been drinking too much all day and was badly intoxicated when he got upon a trolley car at Perkins' Corner that evening. A short time after he motioned the conductor to let him off, which he did. The car, which ran between the North Hampton railroad station and the "Y," and had just come from the station, proceeded to its destination and was returning from the "Y," when Walter H. Remick, the motorman, saw a dark object in front of him upon the track. He at once did all in his power to stop, but as the rails were slippery and the car was running at 9-point speed, he was unable to do so until the object had been struck and dragged some distance up the track. It proved to be the dead body of McCaffrey, who, after leaving the cars, had fallen or lain down upon the track and probably sunk into a drunken stupor. The night was dark and it is possible that this prevented the motorman from seeing the man in season to stop before striking him, but it does not appear that there was any lack of reasonable care and alertness by any one except the victim.

H. M. PUTNEY,
For the Board.

DEATH OF WALTER H. CHASE.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, March 22, 1904.

Investigation at Concord, March 15, 1904.

General John H. Brown appeared for the Boston & Maine railroad.

Witness: William C. Turner, conductor, Charlestown, Mass.

Walter H. Chase was head brakeman upon a freight train on the Fitchburg division of the Boston & Maine railroad. His run was from Boston to Bellows Falls and return. The train left Fitchburg, bound for Bellows Falls, about 12.30 A. M., December 10, 1903. The conductor saw Mr. Chase at Winchendon, when he was in his usual health and spirits. When the train arrived at Keene, Mr. Chase was found on top of a car, lying down with his head on his hands, on the running board. He was in a semi-conscious condition; while he understood what was said to him, he seemed to have no recollection of what had happened. The unfortunate man was taken to the hospital in Keene, where he died at 5.30 P. M., on the day on which the accident occurred.

It seems that after leaving Winchendon the train made no stops until it reached Keene. Between those points the only duty which would call Mr. Chase from the engine, where he should ride, was the turning up of the retainers on the grade, which starts near Troy. Apparently Mr. Chase was in the discharge of that duty, as six retainers had been turned up and not more than two or three more remained. The car on which Mr. Chase was lying had received his attention.

So far as is known no one saw the accident and it is therefore impossible to state just how it happened. The finding of his hat, however, beside the track near bridge No. 402, being the third bridge north of Troy, is significant.

An examination of the bridge revealed the fact that one board had been cracked as if something had hit it. In turning up these retainers it would be necessary for Mr. Chase to stoop down, and it seems to the board that he probably stooped down going under the tell-tale and got up between the tell-tale and the bridge and was hit.

The tell-tales were in perfect order, the train was going at its usual rate of speed and the trainmen were all doing their duty at the time of the accident. Mr. Chase was an experienced brakeman and entirely familiar with this particular run. The

guard at this bridge hangs 16' 9½" above the rail. Just under the broken board the clearance is 17' 3¼".

It is apparent that Mr. Chase met his death through no fault of his or any of his fellow workmen. Accidents of this character will continue just as long as the low overhead bridges are permitted to exist upon our railroads.

GEORGE E. BALES,
For the Board.

DEATH OF FRANK BILL.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, March 22, 1904.

Investigation at Concord, March 15, 1904.

Gen. John H. Brown appeared for the railroad and Mr. J. A. Broderick for the widow of Mr. Bill.

Witnesses: Freeman R. True, engineer, West Canaan, N. H.; Frank C. Wells, engineer, West Canaan, N. H., and W. A. Hoyt, West Canaan, N. H.

Frank Bill, a man about 40 years old, who lived near Goose Point, in the town of Canaan, was killed upon the tracks of the Boston & Maine railroad about 35 rods south of the highway crossing just below the station at West Canaan, at 2.20 o'clock, A. M., January 17, 1904. The next preceding day, Mr. Bill and a brother had been drawing logs to a saw mill in West Canaan with a team consisting of two horses and a traverse sled. At night they left the rear part of the sled at the saw mill and taking the forward sled and horses, drove to Enfield, where they remained until about half past one o'clock the next morning, when they started for their home. On the way they lost something from the sled and the brother went back to find it, leaving Frank to drive the team, which he did, down to West Canaan. There he should have crossed the railroad above the station and taken a road to the north leading to his home about three miles away, but instead of doing this he drove his horses towards the crossing south of the station directly away from his home, and going over a side track, turned down the main track and had gone there about 35 rods when he was overtaken by an extra freight drawn by two engines on its way to Concord. The forward engine struck the team, killing both the horses and their driver, and smashing the sled.

The night was very dark and stormy and the snow was drifting. None of the trainmen knew when the team was struck. The engineer of the first engine, Mr. Freeman R. True, having blown the whistle for the two crossings at West Canaan, and knowing he had a straight line ahead of him, seems to have turned his attention from the track and knew nothing of the accident until he discovered, a short distance below where it occurred, that his cylinder cocks were broken. He then stopped and upon examination found some blood on the front end of the engine and other indications that some one had been struck upon the pilot. Then, after consulting the conductor, he ran to Canaan, cut off his engine and returned to West Canaan, finding the remains of the man and horses beside the track near where they were killed, and turned them over to the selectmen of the town.

Mr. Bill was an intemperate man. He had lived from boyhood in that vicinity and was perfectly familiar with the highways and railroad. The reasonable conclusion is that he remained at Enfield until past midnight and then took a road leading directly away from his home and left it at the crossing and drove down the track because he was intoxicated. He had neither right nor occasion to be where he was, and there is no conceivable reason why he should have been there, sober and sane. If the engineer had seen him as soon as it was possible after leaving the station the train, which consisted of 28 loaded cars, could not have been stopped in season to save him, and that he was not seen, under the circumstances, is not attributable to the fault of any train man or any one else except those who furnished him with the liquor that took away his senses.

H. M. PUTNEY,
For the Board.

DEATH OF WILLIAM J. MCKAY.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, March 22, 1904.

Investigation at Manchester, N. H., March 18, 1904.

Hon. Charles J. Hamblett appeared for the railroad and Walter E. Kittredge, Esq., as administrator of the estate.

Witnesses: Alonzo Barry, brakeman, Nashua, N. H.; Isaac P. Adams, Nashua, N. H.; Charles R. Vantine, freight conductor, Nashua, N. H.; Michael Clark, section foreman, Nashua, N. H.

On the evening of January 26, 1904, a wrecking train left Nashua Junction about 9.50 o'clock, bound for Ayer Junction, over the Worcester, Nashua & Portland division of the Boston & Maine railroad. At the West Yard, so called, at Nashua, the train was detained awaiting the arrival of freight train No. 65, which reached the West Yard about 10.20 o'clock. Upon its arrival an inspector discovered under the head end of the first car the body of a man badly mutilated. It was at first thought to be necessary to jack up the car and the crew from the wrecking train were summoned for that purpose. This, however, was unnecessary as upon closer examination it was found that the clothing of the victim was caught on bolts under the trucks. Upon examination of the body it was found to be that of William J. McKay, a lawyer, who resided in Nashua, N. H.

The wrecking train with crew were sent toward Ayer Junction with instructions to make a thorough examination. Portions of the body were discovered along the track and clearly defined marks in the snow indicated where the body had been dragged. These marks extended almost to the first crossing in the West Yard, being toward Worcester.

About sixteen hundred feet west of the second crossing was found a horse, lying down against the wire fence, headed west, toward Worcester and within the railroad location. The horse was somewhat injured and apparently had been struck by the train.

At the second crossing was found a sleigh, which was headed west toward Worcester. It was on the south side of the crossing and had evidently been driven across and into the deep snow outside the traveled part of the highway. The sleigh was found to be upright, in good condition, and as the snow had been trampled about it, the indications were that the horse had been unhitched from the sleigh. The condition of the harness on the horse sustains this view.

The horse and sleigh were the property of Mr. McKay. As he resided in this section of the city, in driving home, as was his custom, he would pass over the crossing near which the sleigh was found. About two months after the accident the section foreman found on the track a hat and watch, which proved to be the property of Mr. McKay, about 150 feet west of where the horse was found in the fence.

The night was dark and stormy and at the time of the accident two or three inches of snow had fallen. There was evidence submitted to the effect that Mr. McKay's horse was a spirited animal. That he had had trouble with his horse that night on

Main street, that the horse had frequently run away and upon one occasion the week previous had run up the Portland railroad track. As the snow was quite deep where the sleigh was discovered it is our opinion that at that point Mr. McKay had some trouble with his horse and had unhitched him from the sleigh. The horse eluding him then passed up the track. While attempting to secure his horse both he and the horse were struck by freight train No. 65 and thereby he sustained fatal injuries.

Assuming the theory which we have advanced to be correct the death of Mr. McKay is attributable to his own carelessness. When he left the highway and passed up the track in pursuit of his horse, he assumed all risks. Undoubtedly the storm interfered with his seeing or hearing the approach of the train, but upon the evidence submitted we cannot find that any blame attaches to the corporation or the employees of the freight train.

GEORGE E. BALES,

For the Board.

DEATH OF W. A. MONFETTE.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., March 22, 1904.

Investigation at Concord, March 15, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: Joseph R. McDaniells, engineer, Concord, N. H.; George J. Giguere, conductor, Concord, N. H.

W. A. Monfette, a yard switchman, employed in the Concord yard of the Boston & Maine railroad, was fatally injured on the evening of February 25, 1904. This yard is divided into what is known as the northbound and southbound yards. Mr. Monfette was employed in the southbound yard. The two yards are divided by a track that runs through, called the lead, from which other tracks run out. He had been working in the yard for about four months, a sufficient time for him to have become entirely familiar with the situation and movements of the cars and shifters in this freight yard. In a conversation with Mr. George J. Giguere, who had charge of one of the shifting crews the night of the fatal accident, and the last person who saw him alive, he said that "there were some potato cars on the train that they were then shifting out that came from the place where his folks lived, and that he was going in and have a talk with the

man who had charge of the potatoes." It appears that Mr. Monfette after this conversation with Mr. Giguere for some unknown reason passed on to the northbound siding near track No. 15, when a shifter was run up on track No. 15 to get water, there being a water post on that track. The engine passed up head on with lanterns lighted in front and rear. The engineer testified at the hearing that while passing up track No. 15 he saw no one, and the first information that he or his fireman had of the accident was after the engine had returned to track No. 2 when he found blood on the drivers. On making this discovery he sent his fireman to ask the yard conductor to go up track 15 to see if he had run over anybody, and the body of Monfette was found, he having been instantly killed.

The work in the yard that was then being done is the same class of work that is being done every day, and Mr. Monfette must have been familiar with the same. The deceased was a sober and industrious man. Why Mr. Monfette left the southbound yard and passed on to the northbound yard must remain a mystery, and the only reasonable conjecture is that he may have been in search of the cars that were loaded with potatoes, and why he did not observe the approaching engine, being an employee in a freight yard where engines are constantly moving in and out, from the evidence in the case, is not definitely explainable.

From all the evidence obtainable we find that no blame can be attached to the employees of the road, as the shifter was being operated in a reasonable and careful manner, the speed not being over five miles an hour.

A. G. WHITTEMORE,

For the Board.

DEATH OF A. B. COREY.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, March 22, 1904.

Investigation at Manchester, N. H., March 18, 1904.

Hon. Charles J. Hamblett appeared for the railroad.

Mrs. Corey, the widow, was present at the hearing.

Witnesses: David Featherstone, Nashua, N. H.; William Waugh, gatetender, Nashua, N. H.

On the evening of February 27, 1904, Mr. David Featherstone was at Mr. Waugh's shanty in Nashua, which is located at the

Main-street crossing of the Worcester, Nashua & Portland division of the Boston & Maine railroad. About 10.30 o'clock he left Mr. Waugh and walked up the track in a westerly direction towards Worcester. When about 80 feet from Main street, he discovered a human leg near the rail. He immediately returned and reported his discovery to Mr. Waugh and at his suggestion telephoned the police department.

Upon further investigation the body of a man, afterwards found to be Mr. A. B. Corey, was found between the tracks west of Garden street, which is about 200 feet west from Main street, and running parallel thereto. West of the crossing, at the end of the planking, was a place about three or four inches lower into which the body had dropped. The gatetender testified that a shifting engine with a caboose went up over the crossing towards Worcester, sometime between 10 and 10.20 o'clock. He further states that there was a light on the shifter, both on the front and back. He remembered distinctly of hearing the bell on the shifter rung from Spring street,—a street running parallel with Main street, and located easterly therefrom,—up over the Main-street crossing and beyond Garden street.

There was some evidence that Mr. Corey was on Main street a little while before the accident. He was not, however, observed by Mr. Waugh or Mr. Featherstone or any one else. It was a very dark night and the ice and hard snow rendered walking hazardous. It is probable that Mr. Corey, who lived in the neighborhood of Garden street, was either coming from home or returning by way of the railroad track and was hit by the shifter at the point where the leg was found, and his clothing catching in the truck beams, he was dragged to the point where the body was discovered.

Mr. Corey was about forty-nine years of age and a surveyor by occupation. He was accustomed to use the track in going to his boarding house, though it was unnecessary except it shortened the distance. It is entirely possible that Mr. Corey was aware of the approach of the engine and sought to escape injury but owing to the slippery condition of the track he fell across the rail and in all probability was instantly killed.

It is clear that he was a trespasser and that his death was caused by no fault of any one but himself.

GEORGE E. BALES,

For the Board.

DEATH OF JOHN A. P. CHASE.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, April 4, 1904.

Investigation at Concord, March 31, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: Charles H. Straw, engineer, Concord, N. H.; George W. Atwood, fireman, Concord, N. H.; A. M. Kely, conductor, Concord, N. H.; W. A. Lewis, conductor, Concord, N. H.; F. A. Smith, brakeman, Concord, N. H.

John A. P. Chase, a brakeman, in the employ of the Boston & Maine railroad, was fatally injured at Roby's Corner, in Warner, March 12, 1904, at 3.20 o'clock P. M. He was 23 years of age and had had five years' experience as a conductor and brakeman, and was a sober, faithful, and competent man in any position. The train on which he was employed at the time of the accident, was a freight from Claremont to Concord. When they left Claremont Mr. Chase was the rear end brakeman and F. A. Smith was head brakeman, and it was his duty to make the couplings and set the switches at the stations where cars were shifted. Mr. Smith had a severe headache that day and before they reached Roby's Mr. Chase offered to change positions with him and do his work at the head end, which offer was gratefully accepted, Smith going back to the buggy in the rear and Chase to the front. At Roby's there was some work to be done and the engine was cut from the train, which was left on the main line. The engine was then run in on a siding, where it got two cars, took out one to the main line, and set the other back on the siding. Mr. Chase uncoupled the engine from this car upon the side track and it was then his duty as head brakeman to set the switch about 200 feet away. After he cut off the engine nothing is known positively of what he did until he was found injured under the tender near the switch, but it is supposed that he got upon the rear of the engine to ride up and set the switch and when he got off, his clothing caught upon the draw bar so that he lost his footing and clinging to the draw bar was dragged forward until the engine stopped and settled back a few feet, pushing the wheels upon him.

All the evidence, including his statement while he was conscious, that his overalls caught on something, warrants this conclusion. He was immediately taken from under the tender and carried to Warner and then sent to Concord, but he died on the way.

It should be said that in changing work with Mr. Smith, and in riding up to the switch, he was following the usual practice of brakemen when they can help each other or save travel, and that there was nothing unusual in the movements of the engine or cars or in any of the operations of the crew.

H. M. PUTNEY,

For the Board.

DEATH OF THOMAS SCOLLARD.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, April 5, 1904.

Investigation at Concord, March 31, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: John Carder, Meredith, N. H.; W. E. Veasey, Laconia, N. H.

Thomas Scollard, an intemperate man, who had neither home nor regular occupation, was found dead beside the track of the Boston & Maine railroad at Meredith about 6.45 o'clock, A. M., January 13, 1904.

The testimony of John Carder, the section man who found the body, and of W. E. Veasey, the county solicitor, who investigated the case, establishes these facts:

The day before he was killed, Mr. Scollard was at Laconia, where he had his shoes tapped and bought a bottle of whiskey and then went to the station, got upon some north bound train and stole a ride to Meredith, where he jumped off and rolled over in the snow. Then, as shown by the imprints in the snow, he got up, went across the track, and after stumbling once or twice, went over the siding and sat down in the snow beside the rails, where he was struck and killed by one of several trains that passed between 2.41 and 5.30 in the morning.

He was not run over but was injured in the head and his right arm and leg were broken. As the body was warm when found, he probably lived some hours after he was hurt. All the evidence points to the conclusion that he reached Meredith in an intoxicated condition and that he sat or lay beside the track so stupified by liquor that he did not realize he was in danger, and that his death was due to his condition and not to the fault of any other person.

H. M. PUTNEY,

For the Board.

DEATH OF OWEN KERLEY.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., March 22, 1904.

Investigation at Manchester, March 18, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: George B. Randall, engineer, Lakeport, N. H.; D. E. Champion, fireman, Reading, Mass.

Owen Kerley of Rochester, N. H., on January 1, 1904, about 3.30 o'clock P. M., passed from the side of the railroad right-of-way on to the Boston & Maine railroad tracks in the yard at Rochester, at a point some three thousand feet south of the Rochester station, and between two highway crossings in said Rochester. At the time he stepped upon the railroad track the Dover and Lakeport passenger train, due in Rochester at 3.36 P. M., was approaching and within three or four hundred feet, and within plain sight, from where Mr. Kerley stepped on the track. The engineer observed Mr. Kerley step on to the track and supposed he was in the act of crossing the same, but instead he turned and started to walk towards the depot. The engineer immediately sounded the danger whistle and applied the emergency brakes, using every appliance at his command to stop the train. The train was going at the rate of twenty-five miles an hour, and before it could be stopped Mr. Kerley was struck and instantly killed. The train came to a stop some three hundred feet beyond where the body was struck. The body of Mr. Kerley was immediately taken to the passenger station in Rochester, where it was cared for by friends.

Mr. Kerley's hearing was defective and when he passed on to the track he evidently did not look in the direction of the approaching train, for had he looked he would have observed the same and this accident would have been avoided. The engineer did everything that could be done to avoid this accident, and no fault attaches to him or the train hands. On the other hand, Mr. Kerley, having defective hearing, was grossly negligent in attempting to travel on the railroad track, and his carelessness was the sole cause of his death.

A. G. WHITTEMORE,
For the Board.

DEATH OF MARY B. CHANDLER.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., April 5, 1904.

Investigation at Concord, March 15, and March 31, 1904.

Gen. John H. Brown appeared for the railroad and Mr. Henry F. Hollis for Mr. Harry J. Brown, administrator.

Witnesses: Miss Lillian Robinson, Andrew J. Pike, engineer, Plymouth, N. H.; Arthur C. Gile, fireman, Plymouth, N. H.; Joseph Hussey, station agent, East Concord, N. H.

Miss Mary B. Chandler, a resident of Pembroke, N. H., and a dressmaker by trade, on the morning of February 25 went to East Concord, N. H., to do dressmaking. The house where she was employed is situated four or five hundred feet south of the East Concord depot. The railroad passes the rear of the house and the highway passes the front, but to go to the depot by the highway is a short distance farther than by the railroad track. Miss Chandler planned to leave for home on a train that is due to leave the East Concord station at about a quarter before eight o'clock, P. M. Instead of taking the highway, she, accompanied by Miss Lillian Robinson, member of the family where she had been at work, started up the railroad track towards the depot. When within about one hundred feet of the depot platform they both observed the approaching train which was the White Mountain Express, No. 184, running towards Concord. Both were then on the side track and off from the main track over which the express was to pass. Her companion, Miss Robinson, called her attention to the approaching train and she replied: "We have got time to reach the platform" and walked ahead. The train passed, going at a speed of some thirty-four or thirty-five miles an hour. Her companion testified that there was a strong draft or current towards the train and that with difficulty she kept her footing. After the engine passed Miss Chandler disappeared from the view of her companion, who supposed at the moment that she had reached the platform safely, but as soon as the express train had passed she found that Miss Chandler had been drawn under the train and instantly killed. Neither the engineer nor the fireman saw either of the women, although both were watching the track. The engineer on approaching the depot sounded the usual whistle at the whistling post north of the station, and the fireman rung the engine bell, while passing the station. The train was about an hour and a

half late, and had no stop to make at the East Concord station. On reaching Concord the train men were notified of the accident and the train was inspected and blood was found on the wheels of the second coach from the engine; none on the engine. Miss Chandler's body was taken to the station and placed in charge of an undertaker. She was about sixty-three years of age and possessed of all her faculties, except that her hearing was impaired.

This accident is another of that numerous class where parties to save a short distance or a few minutes in time use the railroad right-of-way instead of the public highway for travel. As the express train approached the station, these parties not being on the main track were unobservable by the engineer and fireman and they could not have reasonably apprehended the danger to Miss Chandler and avoided the accident. The train, although behind time, was running at the scheduled speed.

Miss Chandler was undoubtedly drawn under the train by the suction or air currents caused by the moving train. The evidence showed that her hearing was defective, but there was no impairment of her eyesight, and as the train was coming towards her and in plain sight, she had every opportunity to place herself at a safe distance from the main track.

It is clear that her death was the result of want of care on her part, and the railroad and its servants were in no way to blame for the accident.

A. G. WHITTEMORE,

For the Board.

DEATH OF DANIEL MCGREGOR.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, April 25, 1904.

At 6.30 o'clock April 15, 1904, Daniel McGregor, a coachman, who lived at Bellows Falls, Vermont, was found on the banks of the river under the Connecticut river railroad bridge which connects that place with North Walpole, so seriously injured that he died about thirty minutes later. When found he lay within 6 or 8 feet of the water on the New Hampshire bank and had evidently fallen or jumped from the bridge while using it as a foot path. No witnesses can be found.

H. M. PUTNEY,

For the Board.

DEATH OF EDGAR L. CARR, M. D.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, May 31, 1904.

Investigation at Manchester, May 27, 1904.

Gen. John H. Brown appeared for the railroad and Mr. Edward A. Lane of Pittsfield for the estate.

Witnesses: George Salter, engineer, Manchester, N. H.; Frank Annis, fireman, Manchester, N. H.; William W. Badger, conductor, Manchester, N. H.; Charles Mitchell, brakeman, Manchester, N. H.; Joseph Gilmartin, brakeman, Manchester, N. H.; Felix Hill, brakeman, Manchester, N. H.

When the regular freight train from Center Barnstead to Manchester reached Webster's Mills, a station about three miles below Pittsfield, December 14, 1903, the engineer and brakeman discovered that something on the front of the engine had been broken and that there was upon that end a fur carriage robe. They concluded that they must have struck something on the way down, and backed up to Morrill's crossing which is about half way to Pittsfield, and found there on the bank a buggy which had been struck upon the crossing as they went down, and in the house of Mr. Emerson near by Dr. Edgar L. Carr, of Pittsfield, who had been hurled from the buggy by the locomotive and so seriously injured that all efforts to save him failed.

The train which was due to leave Pittsfield at 11.50 A. M., did not leave that day until 3.28 P. M., having been detained by work in the yards. Of the six cars, five were supplied with air brakes which were in working order, as was the entire equipment. As usual, from Pittsfield to Webster's Mills, two brakemen rode in the engine cab with the engineer and fireman. All these men are agreed that they passed Morrill's crossing at from 15 to 18 miles an hour, that the whistle was blown at the post above and the bell was ringing, that the steam had been shut off as it was down grade, that there was no word spoken by either of them in the cab, and that there was no shock or motion of the train of any kind that suggested to them that anything had been struck upon the crossing and none of them saw the team or thought there was one in the vicinity until the discovery at Webster's Mills.

In the absence of any evidence to the contrary, all this must be accepted as fact. Why the team was not seen and why Dr. Carr did not see the train in season can only be conjectured.

It was a clear, cold day, and the wind was blowing strongly from the northwest. At times it blew the smoke and steam down upon the engine so as to shut out the view of the men in the locomotive, and this may have happened that day at that point, as it did at others, on the route. We see no other explanation of the fact that the engineer, who swears he was on his seat looking straight ahead, saw nothing on the crossing. So too, the severity of the weather may have caused Dr. Carr, who was an elderly man, to so protect his ears and face that he did not hear the warning or see the train. The fireman's testimony is that the smoke did not blow down there on his side and he thinks he may possibly have been shoveling in coal when they reached the crossing, but he insists that a moment before he was looking out over the track and saw nothing unusual, but this leads to no satisfactory conclusion and we are unable to reach one.

If all was done as testified, and there is no reason to doubt it, none of the train men were at fault, for the accident was due to a combination of circumstances beyond their control.

H. M. PUTNEY,
For the Board.

DEATH OF SARAH HALFPENNY.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, May 31, 1904.

Investigation at Manchester, May 27, 1904.

Hon. Oliver E. Branch appeared for the railroad, and Mr. Herbert S. Clough appeared as administrator of the estate.

Witnesses: A. R. Snell, engineer, Manchester, N. H.; Eugene Davis, Manchester, N. H.; Clarence Prescott, Manchester, N. H.; Charles F. Good, Manchester, N. H.; George A. Eaton, Manchester, N. H.

Sarah Halfpenny was struck by the locomotive of train No. 302 and instantly killed while she was attempting to cross from Canal street to the Stark Mills in Manchester at 7.50 A. M., December 14, 1903. The train which was the regular accommodation was on time and running as usual about 25 miles an hour. The whistle had been sounded at Amoskeag, at Dean street, for the station and at Bridge street, and the bell was ringing from Amoskeag. When the engineer was about 200 feet from the

Stark crossing he saw Miss Halfpenny step out of Canal street and pass between the stone posts upon the track. Supposing at first that she would stop until the train passed, he put on the brakes slightly and a second after, seeing that she was going ahead, threw the brake into the emergency, and gave the danger signal, but she either did not hear it or did not have time to step out of danger and was struck by the end of the breast beam of the engine and thrown to the ground with such force that she was dead when bystanders reached her.

The testimony of disinterested witnesses is to the effect that her head was muffled as if to protect her from the cold, and that she made no motion which indicated that she was aware of the approach of the train until the instant it struck her, when she was between the two tracks but so close to one that the engine could not pass without striking her.

We find no evidence that the engineer or any other member of the train crew was in any way negligent or inefficient.

H. M. PUTNEY,

For the Board.

DEATH OF CHARLES M. LEET.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, May 31, 1904.

Investigation at Manchester, May 27, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: W. M. Tatro, yard conductor, Nashua, N. H.; John Harradon, yard brakeman, Nashua, N. H.

On the evening of February 11, 1904, Charles M. Leet was in the employ of the Boston & Maine railroad in the capacity of switchman. He was attached to a shifting crew, at work in the west yard at Nashua, N. H., on that evening. There was a switchman's shanty in this yard that Mr. Leet was accustomed to occupy when temporarily relieved from duty. In the usual performance of his work, Mr. Leet lined up the switches for No. 23, which is a regular passenger train from Worcester, due at Nashua about 8 o'clock P. M. After attending to this duty Mr. Leet went into the switchman's shanty, where he remained for two or three minutes. He was next observed by W. M. Tatro, yard conductor, as he came from the shanty, crossed to the south side of the main line and holding his lantern above his

head, appeared to be taking the number of the cars to ascertain their destination. While in this position, with his back slightly turned toward the approaching train, he was struck by passenger train No. 23 and instantly killed. His perilous position was also observed by the yard brakeman, who was distant about two car lengths from the point where the accident occurred. Both trainmen shouted a warning to their unfortunate associate but evidently he did not hear them. The passenger train was about ten minutes late that evening. The fact that the train had not passed must have been known by Mr. Leet as it was his duty to place the switches in position for this particular train and after it had passed to throw them across the road, so that the main track could be again used by the shifting crew.

Mr. Leet was about thirty years old, in vigorous health, of long experience in this kind of railroad service, and at the time of the accident appeared to be in his usual health. The nearest crossing toward Worcester is distant about one mile, the whistle was sounded at that point but it appeared from the evidence that it is not customary to sound the bell while passing through the yard, so no alarm was given by the passenger train as it approached the point where the fatality occurred. As others heard the whistle at the crossing a mile distant, saw the headlight of the passenger locomotive as it came into the yard, it is difficult to account for the lack of care on the part of the victim. Apparently he was intent upon his work in examining the marks on the cars and for the moment forgot that the passenger train was overdue and likely to arrive at any moment. There is nothing in the evidence tending to show want of care on the part of any of the train crew.

GEORGE E. BALES,
For the Board.

DEATH OF THOMAS O'CONNOR.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, May 31, 1904.

Investigation at Manchester, May 27, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: C. G. Emerson, engineer, Bellows Falls, Vt.; C. R. Kendall, engineer, Charlestown, Mass.; A. W. Fregeau, conductor, Somerville, Mass.

Freight train No. 540, drawn by two engines, reached the Keene yard from Bellows Falls about 1.30 P. M., March 11, 1904. The train was brought to a stop west of the freight house and passenger station for the purpose of taking water for both engines. The forward engine, No. 1038, was uncoupled on reaching the yard and run down on the main line to take water from a plug there, and the other engine, No. 1175, was uncoupled from the train and run in on a side track where another water plug was located. After taking water, engine No. 1038 was backed in on the side track on which engine No. 1175 was taking water. The engines were left about fifteen feet apart and the engineers retired to the office and signed orders which gave them a meeting order on train No. 517 at Marlboro. The engines were then backed on to the freight cars, engine No. 1038 following engine No. 1175. After the engines and cars had been connected and the order given to start the train, the engineer of the forward engine observed something on the track ahead of his engine, which proved to be the body of a man, afterwards identified as Thomas O'Connor. The engine had evidently run over him and his injuries were so serious that he lived only a few minutes.

Mr. O'Connor was about fifty-five years old and quite near sighted. He lived near the railroad and was accustomed to cross the track, as it shortened his journey to the station. As no one saw the accident and no outcry was made by the victim, it is a little difficult to state exactly how and when it occurred. But from the testimony submitted at the investigation we are of the opinion that Mr. O'Connor, following the dangerous custom of crossing the railroad reached the track just as the two engines, which were not then coupled together, were backing up to connect with the freight cars. The attention of the victim may have been upon engine No. 1175 which was nearer the cars, and having defective eyesight, he did not observe that the other engine was following. As he stepped on the track, he was struck by the tender of engine No. 1038 and killed.

So far as we could ascertain the train crew were in no respect inattentive to their duty. Apparently there was no excuse for Mr. O'Connor to be on the track. He was a trespasser and his death was clearly the result of his own carelessness.

GEORGE E. BALES,

For the Board.

DEATH OF NAPOLEON RHEAUN.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, June 20, 1904.

Investigation at Concord, June 15, 1904.

Stephen S. Jewett of Laconia appeared for the railroad and E. H. Shannon appeared as administrator.

Witnesses: Edwin F. Bowler, engineer, Lakeport, N. H.; George C. Wilkie, fireman, Concord, N. H.; Arthur F. Merrill, brakeman, Concord, N. H.

The passenger express from Concord to Plymouth reached Laconia January 25, 1904, on time, at one o'clock, P. M., and ran from there to Lakeport, a distance of about a mile, as usual. As it approached the Lakeport station the steam was shut off about 80 rods south and it run slowly to the station with the bell ringing and the whistle blowing. Just south of the station is a crossing protected by gates which were down, and beside one of the gate posts upon the station platform, stood Napoleon Rheaun, a cobbler, who having been home to dinner was returning to his shop on the opposite side of the track. When the engineer first saw him about fifty feet away he stood with his back to the train far enough from the rails to clear the train, but just as the engine reached him he turned around towards the track and was struck by the end of the breast beam of the engine and thrown back upon the platform, receiving fatal injuries, of which he died in about a week. Just why he stood there is not disclosed by the testimony. He was not watching the train that struck him nor another that was headed south upon another track, for his back was turned to both of them. But for some reason, perhaps from habit or because his attention was attracted to something, he stood there as stated until the engine was opposite when its noise or jar startled him and he whirled suddenly toward it. As the engineer expresses it, "it all happened in the hundredth part of a second," and although he was running very slowly, with the steam shut off, into the station, he could do nothing to prevent the accident, which he could not foresee and had no reason to apprehend until it occurred.

H. M. PUTNEY,

For the Board.

DEATH OF JOHN GILBERT.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., June 20, 1904.

Investigation at Concord, N. H., June 15, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: C. H. Wilkinson, yard conductor; John Lecasse, section man; Henry Wilkinson, switchman, all residents of Rochester, N. H.

John Gilbert, a resident of Rochester, N. H., on February 15, was employed by the Boston & Maine railroad, with others, to clear the snow from the tracks in their Rochester freight yard. Mr. Gilbert had been at work clearing the snow from the Wallace crossing, so called, with others, and started to go to the Wallace siding to clear snow from the same. In the yard the shifter was at work shifting cars and had just—to use a railroad expression—“kicked” two cars on to the siding, the same track Mr. Gilbert was walking on, and walking towards the approaching cars. He was observed by the foreman of the yard and requested to look out for the approaching car, but continued walking towards the car and did not attempt to step off the track into the deeper snow near the track until within a few steps of the car. He was then too late as the approaching car struck him killing him almost instantly. Mr. Gilbert was about seventy years of age and was employed temporarily to assist in clearing snow from the tracks in the freight yard.

No fault can be attached to any of the employees of the company as they were doing only usual work that is performed in all freight yards and which Mr. Gilbert had occasion to observe. In addition he was warned by his collaborators of the danger but evidently mistook the speed of the approaching car and miscalculated the time it would take him to step off the track. By reason of his negligence in not sooner stepping from the track he was struck by the approaching car and fatally injured.

A. G. WHITEMORE,

For the Board.

DEATH OF UNKNOWN MAN.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., June 20, 1904.

Investigation at Concord, N. H., June 15, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: Oscar G. Leighton, engineer, Concord, N. H.; Maurice C. Wadleigh, conductor, Concord, N. H.; E. C. Jackman, section foreman, Franklin, N. H.

On May 3, 1904, at about 1.55 o'clock, A. M., the rear cars on the freight train, No. 267, while going north about a mile north of the Franklin depot passed over the body of an unknown man whose identity it has been impossible for the railroad officials or the authorities at Franklin to ascertain. It appears as the train was going north the conductor, Mr. Maurice C. Wadleigh, felt a jar while standing on the rear car as if the car had passed over some slight obstruction. Fearing that the train might have run over something, he went over to the head of the train and spoke to the engineer, who informed him that he had seen no one on the track and felt no unusual jar of the engine. When the train arrived at East Andover, the next station, the same was examined and blood was found on the rear wheels. The section foreman was notified and found the body of this unknown man at the above named place.

We have no positive evidence as to how this man came upon the track, but from the fact that the engineer had not observed anybody on the track at the point where the body was found leads us to conclude that this man, who from his appearance evidently was a tramp, got on to the train at Franklin and was riding between the cars; that from some carelessness or drowsiness lost his hold and fell, the rear trucks passing over him.

Such accidents cannot be avoided by the most extreme diligence on the part of railroad officials and employees and consequently no blame is attached to them.

A. G. WHITTEMORE,

For the Board.

DEATH OF FREDERICK R. STUART.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, June 21, 1904.

Investigation at Concord, June 15, 1904.

Gen. John H. Brown appeared for the railroad and Samuel B. Page, Esq., of Woodsville for the father of the deceased.

Witnesses: Joseph B. Nourse, engineer, Lancaster, N. H.; Harley Pike, fireman, Woodsville, N. H.; George Woodgate, conductor, Whitefield, N. H.

Frederick R. Stuart, a brakeman on a log train, was fatally injured January 5, 1904, at a point on the South Branch track, about midway between South Branch Junction and Bowman's, a station on the White Mountain division of the Boston & Maine railroad. The log train was made up the day previous and left on the siding at South Branch Junction. The train crew, of which Mr. Stuart was a member, left Whitefield on the morning of January 5, with a freight train bound for Bowman's. Arriving at this point the engine and caboose were detached and run to South Branch Junction for the purpose of hauling out the log train. In accordance with the usual method of operating log trains on this branch the engine and caboose were attached to the rear end of the log train, which this particular morning consisted of eight lengths of logs, and it was backed up to Bowman's. This was the only way in which logs could be taken out of South Branch and for two winters trains had been operated in this manner. The better to observe whether the track was clear from obstructions and to give warning to the engineer if such appeared, it was customary for one of the brakemen to ride the head of the logs from South Branch to Bowman's. The brakemen alternated in this work, and on the day of the accident it was Mr. Stuart's turn to ride on the head end of the train. The conductor and two other brakemen were in the caboose when the train started for Bowman's at about 9.55 o'clock in the forenoon. Shortly before the accident, as the train was rounding a curve, Mr. Stuart was observed by the engineer occupying his usual position on the logs. A few moments later when the train had reached the straight line and while the engineer was attending to his engine to keep it from slipping, he heard Stuart shout from the fireman's side and immediately applied the brakes, bringing the train to a stop as quickly as possible, consistent with safety. The unfortunate victim was found beside

the track very seriously injured. So far as could be determined only a portion of the train had passed over him. Mr. Stuart was still alive and perfectly conscious. To the trainmen who inquired of him the cause of the accident he said: "I slipped off; there is no one to blame but myself." The injured man was put upon the train and carried to Bowman's and thence to the Morrison hospital at Whitefield, where he died about one o'clock that afternoon.

Mr. Stuart was about twenty-three years of age, of excellent character and regarded as a very competent railroad man. This was his second winter on this log train and he was entirely familiar with its operation. At the time of the accident the train was moving at the rate of eight to ten miles an hour, which was the usual rate of speed at that point. There was no evidence submitted tending to show that the train struck an obstruction and as no one saw the victim as he fell from the train, the best and only evidence on which to base a conclusion is the statement of Mr. Stuart himself that "he slipped off." The train was in charge of competent men, who had had extensive experience in running log trains and it is not apparent that they were in any way neglectful of their duty in this instance.

The train was not equipped with air brakes. It was, however, equipped as are other trains engaged in similar work. There are certain risks incident to such an occupation as Mr. Stuart chose to engage in and those risks he assumed with attending consequences.

GEORGE E. BALES,
For the Board.

DEATH OF ARTHUR SIMPSON.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, July 1, 1904.

Investigation at Concord, June 29, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: Warren E. Emerson, engineer, Concord, N. H.; George U. L. Leavitt, Lebanon, N. H.

Between 8 and 10.30 o'clock of the evening of June 4, 1904, Arthur Simpson was seen several times near the house of George U. L. Leavitt, who lives near the track of the Boston & Maine railroad between Lebanon and West Lebanon. He was an opera-

tive in the woolen mills, had contracted intemperate habits and was intoxicated at the time. About 3.45 o'clock the next morning, Mr. Emerson, the engineer of a passenger train going south, saw a dark object upon the track near Mr. Leavitt's house, and thought it was a dog, but as soon as he could do so reported what he had seen, and the examination that followed disclosed the fact that the object was the mangled body of Mr. Simpson, who had evidently been run over and killed by one of the several trains that went north some hours before.

There were no marks upon any of the engines or cars indicating that they had passed over him. He was not seen alive for four or five hours before his body was found, and there is no evidence to show whether he was walking or sleeping upon the track or fell while trying to steal a ride, or slipped and fell over the rail while trying to get off the roadbed and let the train pass. It was more than 200 feet from the nearest crossing to the spot where he was killed and there is no known reason why he should have gone there.

H. M. PUTNEY,
For the Board.

DEATH OF ALFRED B. MORGAN.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, July 1, 1904.

Investigation at Concord, June 29, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: F. N. Ellsworth, conductor, Concord, N. H.; E. R. Sherman, motorman, Concord, N. H.; Charles H. Osgood, Concord, N. H.; J. S. Norris, Concord, N. H.

Alfred B. Morgan, an unmarried man, 29 years of age, who lived with his father in the southwestern part of Concord, having eaten his supper on the evening of June 15, 1904, borrowed of a neighbor a motor bicycle to go to a carpenters' meeting at the north end.

He went up State street to Pleasant street and there ran into an electric car that was running up Pleasant street to the west end, and struck it with such force that he was thrown to the ground and so injured that he died the next morning. All the witnesses agree as to the facts, which are these: The electric

car was running slowly, not more than five miles an hour, and its crew were at their posts attentive to their duties. Mr. Morgan, who had only used the motor cycle a few times, was riding on it about twenty miles an hour. When he had almost reached the Pleasant-street crossing he apparently saw the car and tried to steer himself around the rear end of it, but struck the running board diagonally and was hurled against the rear post of the car, breaking it, and then to the ground. Nothing that the men who were running the car could have done would have saved him. They had no time in which to slow up after he came in sight up State street, and no reason to try to do so. Even if they had come to a stop on the crossing, he would have struck the car nearer the forward end.

The fatality must be charged to the inexperience of the victim, which made him incompetent to control his machine, or to realize how fast it was running.

H. M. PUTNEY,
For the Board.

DEATH OF JOHN CREIGHTON.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., July 5, 1904.

Investigation at Concord, N. H., June 29, 1904.

Gen. John H. Brown appeared for the railroad.

Witness: William E. Garside, yard conductor, Dover, N. H.

John Creighton, a resident of Lawrence, Mass., was in Dover on the fifth day of May looking for work. At about 11.20 o'clock, P. M., Mr. William E. Garside, a yard conductor, in the Dover freight yard, found Mr. Creighton's body lying between the rails on one of the tracks in the freight yard. The body had been run over by a passing train and the ground between the rails had the appearance that the body had been dragged upon the track for about one hundred and twenty-five feet. The last train to pass from the yard on this track was freight train No. 600 going towards Lawrence. No one saw Mr. Creighton upon the track and no one knew of the accident until his body was found as before stated, and from evidence introduced at the hearing it was evident that he had gone to the freight yard for the purpose of stealing a ride on freight train No. 600, which left that place for Lawrence that night; that in some way he fell in attempting to board the train, or fell from the train while the same was in motion in the yard.

He was not seen by any employee in the yard, or any of the train crew on the freight train, and they had no knowledge of the accident until subsequently informed by the train officials after they had left Dover. No blame can be attached to any employee of the road, as Mr. Creighton's presence in the yard was not known to them.

A. G. WHITTEMORE,

For the Board.

DEATH OF PETER PERRON.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., July 5, 1904.

Investigation at Concord, N. H., June 29, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: Joseph H. Higgins, engineer; H. L. Osborne, fireman; Nathan Morrell, conductor, all residents of Boston, Mass.

Peter Perron, a man about thirty years of age, resided at Salmon Falls village in the town of Rollinsford. On May 31, 1904, he started for Dover, walking on the railroad track of the western division of the Boston & Maine railroad. At about 10.25, between the Rollinsford station and Dover, he met train No. 7 going east. When the engine of the passenger train, which was going at the rate of thirty-five miles an hour, passed a curve he saw Mr. Perron on the track walking towards the approaching train, and when within one hundred feet of him the engineer gave the danger signal, to which Perron paid no response. His head was erect and he was apparently looking towards the approaching engine. When within about forty feet of the engine he then for the first time made an effort to leave the track, but was too late as the engine struck him just as he was stepping off the outside rail. He was thrown about forty feet into the ditch and instantly killed. The train was stopped and his body taken to Salmon Falls.

The engineer, as the train rounded the curve near where the man was struck, saw Mr. Perron and expected, as he was looking towards the train, that he would step off from the track any minute, and when within one hundred feet of him he sounded the danger whistle and applied the brakes, doing everything that a judicious and careful engineer could be expected to do under like circumstances. There were no crossings in the immediate

vicinity and the accident is the result of the deceased's own negligence in not leaving the railroad track the instant he saw the approaching train.

A. G. WHITTEMORE,
For the Board.

DEATH OF LILLIAN MAY NICHOLS.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., October 17, 1904.

Investigation at Concord, October 11, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: Fred L. Carr, engineer, Claremont Junction, N. H.; G. M. Parmenter, fireman, Concord, N. H.; Herbert Stone, Jr., Newport, N. H.

Lillian May Nichols, a little girl seven or eight years of age, lived with her parents near the railroad track of the Concord & Claremont railroad in the village of Newport. On the afternoon of August 15, 1904, the freight engine of the local freight passed on to the siding north of the freight depot at Newport, to draw out some freight cars loaded with lumber. The engine was coupled to the cars and then proceeded to back out. This little girl, with her brother, immediately after the engine passed in on to the siding left the crossing and followed up the track towards the engine. Herbert Stone, a lad about ten years of age, who was sitting on the steps of his house near the siding, testified that he saw the engine as it passed on to the siding and the little girl and her brother walking up the track behind the engine. He said Lillian Nichols was walking on the rail, her head down, and appeared to be intent only upon keeping her balance. He saw the engine backing toward her and shouted, but the girl paid no heed to his call and she was struck by the engine and instantly killed.

The engineer testified that he rung the bell constantly from the moment the engine started to back from the siding and was looking out over the tender but saw nothing of the child, she being on the fireman's side. The fireman testified that he was in the act of shoveling coal when he heard some one shout (presumably the Stone boy). He immediately notified the engineer and looking down the track saw the girl, who was on his side of the engine, some twenty or twenty-five feet from the same. She was, to use his expression, "tip-toeing along" on the rail.

The engineer immediately shut off the steam, applied the brakes and did everything that was possible to stop the engine and cars. The track at this point was down grade and the engine had gained considerable momentum. It was soon stopped, but too late to avoid the accident as the child was struck and instantly killed.

This child had wandered from the highway on to the railroad siding, and her presence was unobserved by the engineer and fireman, although the engineer was on the lookout, and the fireman in the performance of his regular work. No blame attaches to them for this unfortunate accident.

A. G. WHITTEMORE,

For the Board.

DEATH OF WILLIAM CARROLL.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., October 17, 1904.

Investigation at Concord, N. H., October 11, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: William P. Lang, Tilton, N. H.; A. P. Lake, engineer, Concord, N. H.; F. W. Chapman, fireman, Concord, N. H.

William Carroll, a mill operative, who resided in Tilton, N. H., was struck by the locomotive attached to express train No. 177, on the evening of August 23, 1904, and instantly killed. The fatality occurred about 1200 feet below the passenger station in Tilton, in a cut where the tract makes a sharp curve. Train No. 177 is a night express running north from Concord on the White Mountain division of the Boston & Maine railroad, and reaching Tilton at 11.30 o'clock. The evening on which the accident occurred, which was a fair, moonlight night, the train was on schedule time and running at its usual rate of speed. Owing to the curve and the additional fact that the train was passing into a cut with high banks on both sides of the track, the man was not observed until seen by the engineer after being struck, when his body was thrown up the bank. Arriving at the Tilton station the engineer reported to Night Policeman William P. Lang, who accompanied him to the place where the man was struck. Mr. Lang at once recognized the body to be that of William Carroll, whom he had seen about 10 o'clock that evening badly intoxicated. Mr. Lang testified that on the evening previous he

had also seen Carroll grossly intoxicated and sent him home. From the testimony of the officer it appears that Carroll on the evening on which he met his death, left the street and started down the track toward the place where the body was found. This was in the direction of his home, and a path much frequented by mill operatives leads across the track near the place where Carroll met his death. There are no means of determining with absolute certainty, but it seems fair to conclude that overcome by liquor Carroll was sitting on the rail asleep, when hit by the locomotive. The fact that his body was but slightly disfigured and a blow upon the side of the head caused death, emphasizes this conclusion.

There are three crossings within a mile from where the accident happened. The usual whistles were sounded and the bell rung continuously from the first crossing until the station was reached. The head light was lighted and burned brightly. Even a stranger, totally unfamiliar with the surroundings, would have received sufficient warning to have avoided danger. But for one who must have known that a train was due at that time, who lived in the vicinity and was fully acquainted with the surroundings to have thus met his death, there can be but one conclusion, liquor deprived him of the power to take care of himself and thereby his life was sacrificed. Those in charge of the train were attentive to their duty, and no act of theirs could have averted the accident.

GEORGE E. BALES,
For the Board.

DEATH OF WILLIAM CREED.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., October 17, 1904.

Investigation at Concord, N. H., October 11, 1904.

Gen. John H. Brown appeared for the railroad.

Witness: Carroll H. Ludlow, switch tender, Concord, N. H.

Freight train No. 271 on the White Mountain division of the Boston & Maine railroad left Concord, northbound, about 2.30 o'clock A. M., August 25, 1904. A few minutes after its departure Mr. Carroll H. Ludlow, a switch tender, in the north yard at Concord, while about his work heard groans and upon investigation discovered a man terribly injured, lying beside what is

known as the old White Mountain track, at a point near the Diamond Crossing, so called. Mr. Ludlow, finding the victim conscious and apparently of clear mind, made inquiries with view to establishing his identity. He was able, however, to obtain but little reliable information, as the statements of the injured man were most conflicting. When asked how the accident happened, he told Mr. Ludlow that he was attempting to get on the freight train and missing his hold fell and thereby was injured.

It appeared from the evidence that he was probably riding on the bumpers between the cars, on freight train No. 271, which was the only train which had passed over this track for several hours, and a sudden increase in the speed of the train caused him to lose his hold and in this manner he was thrown to the ground and received the terrible injuries which he sustained. In any event he had no business on or about the train, and no fault could possibly be attached to any one except the victim.

Everything possible was done for the injured man but he died at the hospital at about four o'clock in the morning of the same day on which the accident occurred. It was subsequently learned that his name was William Creed, that he was twenty-eight years of age and that his people resided in Medford, Mass.

GEORGE E. BALES,

For the Board.

DEATH OF WILLIAM REAGAN.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., October 17, 1904.

Investigation at Concord, N. H., October 11, 1904.

Gen. John H. Brown appeared for the railroad.

Witness: Michael Foley, Manchester, N. H.

On the evening of September 13, 1904, Mr. Michael Foley, a resident of Manchester, an employee of the Amoskeag Manufacturing company, had occasion to go to what is known as the "lower weir," located south of the passenger station in Manchester. He left there about 9.20 o'clock bound for home, his course taking him up the track past the station. When near the little park, which marks the place where the former passenger station was located and at a point about opposite the center, he discovered beside the north bound track the dead body of a

man afterwards found to be that of Michael Reagan of Haverhill, Mass. The man had been run over by the train and the mangled condition of the body indicated that death must have been instantaneous. It appeared that a man was seen by a motor-man on the other side of the park about 9 o'clock that evening in a badly intoxicated condition. While there are no positive means of identification it is fair to assume that this was the man killed, that he crossed the park, walked upon the track and thereby met his death. The only train which passed the point where the accident occurred, between 8.30 and 9.30 o'clock, P. M., was No. 171, a passenger train which left Manchester at 9.07, going north. None of the train men saw the man and therefore have no knowledge as to how the accident happened, though apparently this must have been the train which caused Mr. Reagan's death. A trespasser and probably deprived of his senses by the excessive use of liquor, it is clear that Reagan's death must be charged to his own want of care and that the railroad and its employees were in no way at fault.

GEORGE E. BALES,

For the Board.

DEATH OF WILLIAM F. BALCH.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., October 17, 1904.

Investigation at Concord, October 11, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: George W. Simpson, engineer, Woodsville, N. H.; E. D. Longway, fireman, Woodsville, N. H.; John Jenness, brakeman, Woodsville, N. H.; Charles H. Ross, baggagemaster, Woodsville, N. H.

William H. Balch, a resident of Lancaster, N. H., and about thirty-eight years of age, was for several years employed as car inspector at Fabyans, on the White Mountain division of the Boston & Maine railroad. About one year previous to the accident he left the employ of the railroad and engaged in the life insurance business. In the practice of his new occupation it had been customary for him to solicit insurance from the men in the employ of the railroad. On September 15, the day of the accident, he was in the Fabyans railroad yard, evidently for the purpose of interviewing some of the employees at work there.

The day was stormy, rain was falling and the wind was blowing with considerable velocity. The engineer and fireman of the passenger engine which had recently arrived from Woodsville drawing the New York express were shifting out the cars preparing for its return trip. They were doing the same in the usual and customary manner, and all of the movements of the engines and cars in the yard were familiar to the deceased. As the engineer and fireman were passing up the yard on their engine they saw Mr. Balch standing near the car repair shop, a small house in the yard which is used by the yard men as a protection from the elements when off duty, and, as it was raining and he had an umbrella, they thought that he was about to enter the same. As they passed down the track opposite the shop, he was not seen by the engineer or fireman who supposed that he had entered the yard house, but instead of that he evidently attempted to cross the tracks in front of the engine as it was backing down, and was struck and instantly killed.

Mr. Balch, although familiar with the movements of the engines and cars in the yard, after years of work in that particular place, evidently attempted to cross the tracks without looking to see where the shifting engine was, or whether the same was approaching him, and for his carelessness in this particular he received the fatal injury.

There was no public crossing at this place and the engineer and fireman were performing their regular work in the usual manner, and the accident to the deceased was the result of lack of care on his part while on the railroad property in a place he knew from years of experience to be very dangerous.

A. G. WHITTEMORE,

For the Board.

DEATH OF HENRY M. ADAMS.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

MANCHESTER, N. H., October 24, 1904.

Investigation at Manchester, October 20, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: L. L. Hall, freight conductor, Manchester, N. H.; J. S. Wicon, yardmaster, Nashua, N. H.; H. E. Hodlin, brakeman, Nashua, N. H.

Mr. Henry M. Adams, a yard conductor, about thirty-four years of age, was employed in the Nashua freight yard of the Boston

& Maine railroad and had charge of shifting engine No. 704. On the morning of June 13, 1904, there was a circus train run in three sections from Concord to Nashua. When the first section of this train arrived in Nashua, while passing on to the Worcester yard, so called, at Nashua, a car loaded with horses was derailed near Bridge street crossing, and to get the train past the derailed car, it was necessary to connect an engine to the rear of the train and take the train past the same on an adjoining track. Mr. Adams, the deceased, having charge of engine No. 704, was directed to attach the same to the rear end of the train. The engine was not of sufficient power to draw the train back and a second engine was attached to the rear of the first. With the assistance of the two engines the train was run on to the adjoining track and started west towards the Worcester yard, where the circus was to be unloaded. The train consisted of twenty loaded freight cars, including a caboose and three engines, one at the head and two at the rear. As the train started, Mr. Adams climbed on to the caboose which was just forward of his shifter. It was about 4 o'clock A. M., and unusually dark for that hour of the morning by reason of the rain that had been falling heavily for some hours. The train had moved only a short distance when the caboose left the rails. Standing on a siding next the moving train were several passenger cars and when the caboose left the track Mr. Adams shouted to the train men that were on the car with him to jump, and he immediately attempted to jump on to the top of the passenger cars on the adjoining track; the top of the passenger car where he struck was wet and he missed his footing and fell under the moving train and was run over, receiving injuries which resulted in his death. Mr. Adams was put into an ambulance and taken to the hospital where he died at about 5 o'clock, or about one hour after receiving the fatal injuries. There were two other men on the caboose at this time; they did not jump but held fast to the car and escaped injuries. The train was moving at about seven or eight miles an hour at the time of the derailment of this car, and, as soon as the same was discovered, the engineer of the forward engine stopped the train after dragging the caboose some forty or fifty feet.

Mr. Wicon, yardmaster at Nashua, testified that he instructed Mr. Adams to assist with his engine in pulling the train back after the derailment of the car of horses, that when he had fulfilled that order it was his duty to cease work and see that his engine was cut off. Had this order been complied with, and the engines in the rear of the train detached, we are of the

opinion that this accident would have been avoided as, from the evidence submitted, it appears to us that the caboose was derailed by reason of the pressure from the two engines in the rear pushing the train over the curves on the side tracks over which the train had to pass.

A. G. WHITEMORE,

For the Board.

DEATH OF FRANK McCANN.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, October 24, 1904.

Investigation at Manchester, October 20, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: William J. Hickey, gate tender, Nashua, N. H.; Charles Austin, brakeman, Nashua, N. H.; Henry E. Page, conductor, Nashua, N. H.; Charles McDermott, Nashua, N. H.

At about 9 o'clock on the evening of July 7, 1904, Frank McCann, a man about 30 years of age, who lived in Nashua, was in the railroad yard in that city in an intoxicated condition. William J. Hickey, a gate tender, met him and told him he had better go home, advised him to keep in the street away from the tracks and then left him to attend to some cars that were passing.

A few minutes afterwards McCann staggered up to Charles McDermott, who was selling pop corn on the Hollis-street crossing and asked him to drive away some boys who were making sport of him, and McDermott did so. Just then a long freight train pulled slowly out upon the track and McCann caught hold of the handles of one of the cars in the middle and putting his foot in a low step was carried in that position out of McDermott's sight. The next known of him he was discovered under the wheels of a car in this train with both arms and legs crushed and a bad wound in his side, at half past nine. He died at about one o'clock the next morning. He undoubtedly lost his hold upon the car on which McDermott saw him and fell upon the track. He had no business or right in the yard and instead of going towards his home as the gateman told him to, he had gone in the opposite direction showing that he did not know what he was doing.

The accident was due entirely to his intoxication.

H. M. PUTNEY,

For the Board.

DEATH OF HORACE W. BEAN.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, October 24, 1904.

Investigation at Manchester, October 20, 1904.

Mr. William Sanborn appeared for the railroad.

Witnesses: Smith Pike, conductor, Sanbornville, N. H.; O. F. Kimball, brakeman, Sanbornville, N. H.

Horace W. Bean, a brakeman, employed upon the Eastern division of the Boston & Maine railroad, while sitting upon the monitor top of the caboose car in freight train No. 859, from Conway Junction to Sanbornville, was struck by the low bridge near Rochester, thrown to the ground and instantly killed August 10, 1904, at 10.25 o'clock A. M.

The train, which consisted of 19 cars, was running as usual. Its crew was comprised of the engineer, fireman, conductor, and three brakemen, one of whom was Mr. Bean, who had been running on that train for five or six years and was perfectly familiar with its operation and the road. On this trip he was serving as rear brakeman or flagman and Mr. O. F. Kimball was head brakeman. The middle man was making his first trip. When they left Somersworth Kimball, who was in the caboose, saw Bean sitting upright on the corner of the monitor facing towards the locomotive. Kimball then went out, passed over eleven flat cars that were next to the caboose and climbed upon a box car to tell the new man about the bridge which they were approaching and then stepped down upon the ladder to pass under the bridge. Looking back he saw the tell tales for the bridge strike Bean, knock his hat off and cause him to throw up his hands and while he was in that position he came in contact with the bridge.

Our investigation disclosed that the evening before this occurred Bean had been to a dance near Sanbornville where he lived; that he returned the team with which he went, at a quarter past three that morning; that he then went to his boarding house and changed his clothes and was at the yard to take his train at 4.40; so that he could have had no sleep that night. From the time he left Sanbornville at 5.10 until he was killed at 10.25 he had been at work upon the train.

The reasonable conclusion is that after he sat down upon the monitor top of the caboose he fell asleep and was unconscious until the tell tales struck him and he instinctively threw up his

hands when it was too late for him to recover control of himself and get out of danger, as he had probably done hundreds of times before at that point. That an experienced, sober, competent man, in a bright clear day, while looking straight at a bridge, which he knew was much lower than his head, should allow himself to be carried against it as he did can be explained in no other way.

H. M. PUTNEY,
For the Board.

DEATH OF MOSES TONEY.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, October 24, 1904.

Two Canadian Indians, named Mouse and Toney, who had been making baskets in a gypsy camp near Portsmouth, got intoxicated in that city August 14, 1904, and having procured a bottle of rum started down the railroad track towards Boston about half past seven o'clock in the evening. The next morning Toney's dead body was found between the two main line tracks near the pumping station, where he had evidently been struck by a train, although none of the crews of the several trains that passed during the night saw him or had any knowledge that any one had been injured. All that is known of the accident is the story told by Mouse, who has since disappeared. He said that he and his companion had been drinking that day and had fifty cents and a half pint of rum; that they started along the railroad track, and were walking towards Boston, when all at once they saw a headlight. He hollered, and they both jumped, apparently jumped out of the way of this train, which was probably train No. 247, and jumped in front of train No. 102. Mouse was uninjured and went to Toney and spoke to him in Indian language, but got no reply. He saw a light up in a field, which was in the farmhouse of Hiram Hayes. He went up there and got them out with a lantern, and said his friend had been struck by a train. They searched the railroad track in the vicinity of the accident, as near as Mouse could remember, but were unable to find Toney. They finally concluded that he was only partially stunned, and had gotten up and walked away, so Mr. Hayes returned to his house, and Mouse, the Indian, laid down beside the track and went to sleep and slept until the next morning.

About half past five they received a telephone message at police headquarters from the pumping station that a man had been found on the tracks. The night officer, medical examiner, and undertaker went to the scene of the accident, and found the body of Toney lying between the two main line tracks, probably in the same place where he was lying when his chum left him, but was not found by the searching party, as they did not go far enough up the track.

Mr. Hayes places the time of Mouse's calling at his house as about 7.40, as near as he could remember. There is no crossing near where the man was struck. The nearest crossing would be about three quarters of a mile east, and half a mile west. Mr. Mouse claimed that they were walking the track, and that they had been drinking, and that his chum was struck by a train, but could not tell whether it was a freight or a passenger; said it was going very fast. Toney was a man about twenty-five years old, married, and claimed that he lived near Bear River, N. S.

His injuries consisted of a broken arm, leg, hip and collar bone. The body was taken in charge by Undertaker Hamm, and buried at Portsmouth in the paupers' burying ground, August 17.

H. M. PUTNEY,

For the Board.

DEATH OF VICTOR HENRICKSON.

STATE OF NEW HAMPSHIRE.

IN BOARD OF RAILROAD COMMISSIONERS.

CONCORD, N. H., October 24, 1904.

Investigation at Manchester, October 20, 1904.

Gen. John H. Brown appeared for the railroad.

Witnesses: Henry L. Case, engineer, Lunenburg, Mass.; John H. Crosby, fireman, Cambridge, Mass.

On the 25th of August, 1904, at about 5.29 o'clock in the afternoon, when the passenger train between Bellows Falls and Boston was nearly two miles west of Marlborough station, and a mile, at least, from the nearest highway crossing, as the train rounded a curve, approaching a rock cut, the engineer observed Victor Henrickson sitting upon the ties between the rails, back to the approaching train and only about one hundred and twenty-five feet ahead of the engine. The train was running at the rate of thirty-five miles an hour, its usual speed at that

place. The instant the engineer observed Mr. Henrickson on the track, he shut off the steam, applied the emergency brakes and gave the danger whistle, but when the train was brought to a stop it was found that the engine, baggage-car and the forward end of the smoking car had passed over Mr. Henrickson, who was badly mangled, and death must have been instantaneous.

The deceased was traveling on the railroad track and was evidently resting in the shade of the rocks at the cut, and in this dangerous position he was overtaken by the train and instantly killed. No blame attaches to the engineer or fireman as they did everything possible to stop the approaching train.

A. G. WHITEMORE,
For the Board.

DEATH OF HENRY KEENAN.

IN BOARD OF RAILROAD COMMISSIONERS.

STATE OF NEW HAMPSHIRE.

CONCORD, October 24, 1904.

Investigation at Manchester, October 20, 1904.

Mr. William Sanborn appeared for the railroad.

Witnesses: Smith Pike, conductor, Sanbornville, N. H.; Grover Tucker, Sanbornville, N. H.

Smith Pike, a conductor on the Eastern division of the Boston & Maine railroad, while making up his train in the Sanbornville yard, about 4.50 o'clock on the morning of September 15, 1904, discovered the body of a man on the main track from Sanbornville to Wolfeborough. It proved to be Henry Keenan, who was seen around the station the evening before in a badly intoxicated condition by Grover Tucker, whom he told he was going to Center Wolfeborough. Mr. Tucker told him to stay there and he would assist him on the train when it arrived, but Keenan said he had time for another drink and started for the hotel. That was the last seen of him until his dead body was found in the morning by Mr. Pike. There had been no trains over that track after the passenger train which left at 7.55 the evening before. The engineer testified that where the body was found would be about where the fireman would be tending to his fire and as that would obstruct the light somewhat that may have been the reason he did not see him on the track.

The point where the body was found was in the direction of his home. Whether the man started to go home but was so overcome by liquor that he fell on the track and was run over or how the accident happened we cannot say. He was a trespasser and had no right in the railroad yard.

H. M. PUTNEY,
For the Board.

APPENDIX.

NEW HAMPSHIRE TRACTION COMPANY.



NEW HAMPSHIRE TRACTION COMPANY.

PLAN AND AGREEMENT OF REORGANIZATION.

THIS AGREEMENT made and entered into this 1st day of November, 1904, by and between such of the holders of the "First Lien Four and One-Half Per Cent Sinking Fund Gold Bonds" (hereinafter call the "Bonds") of the New Hampshire Traction company (hereinafter called the "Traction company"), and such of the holders of the "Certificates of Indebtedness" of the New Hampshire Traction company, issued for the purpose of refunding the semi-annual interest on the bonds, represented by the coupons maturing January 1, and July 1, 1904, and January 1, and July 1, 1905, as may become parties hereto in the manner as hereinafter provided (hereinafter called "Bondholders"), parties of the first part, and Otto T. Bannard, Alfred D. Foster and Charles F. Ayer, who are hereby constituted a committee representing the said bondholders (hereinafter called the "Committee"), parties of the second part, and the New York Security and Trust company, as depositary (hereinafter called the "depository"), party of the third part, WITNESSETH:

WHEREAS, It has become apparent that the earnings of the Traction company are not sufficient for the payment of interest on its bonds, thus making it necessary and desirable that an immediate reorganization and readjustment should be effected; and,

WHEREAS, The committee, at the request of the holders of a large amount of said bonds and certificates of indebtedness, have prepared the following plan for the reorganization of said company, and are willing as a committee acting under this agreement to endeavor to carry out and give effect to such plan; said plan being as follows:

PLAN.

A new company or board of trustees under a trust agreement, such new organization being hereinafter called the "New Company," shall be formed to take over by foreclosure or otherwise, all of the stocks, bonds and other securities owned by the Trac-

tion company and held as security for the bonds, or the physical properties of such corporations, or the physical properties of some of such corporations and the bonds, stocks and securities of other of such corporations. The new company shall issue not exceeding four million dollars (\$4,000,000) par value of preferred stock and not exceeding four million dollars (\$4,000,000) par value of common stock; the preferred stock to be entitled, in preference and priority over the common stock, to non-cumulative dividends in each and every year, at such rate up to, but not exceeding, four per centum (4%) per annum, payable out of the net profits of the new company, as shall be declared by the board of directors or trustees of the new company; such dividends to be non-cumulative, limited to four per centum (4%) per annum, and said preferred stock to be entitled to no other or further share of the profits. No dividends shall be declared or paid on the common stock in any year, except out of the earnings for such year, and not until the full four per centum (4%) is earned, declared and appropriated for the preferred stock for such year. In event of the dissolution of the new company or the sale of its properties and the distribution of capital among the stockholders, the preferred stock shall be entitled to be paid in full to the par value thereof before the common stock shall be entitled to any share of such capital on such distribution. The preferred and common stock shall have equal voting rights, but any proposed action by the new company, required to be consented to by the holders of any particular proportion of the capital stock of the company, shall not be taken except upon the consent of such proportion of each class of stock. Except as herein provided, said preferred stock and common stock to be issued in form and in every other respect on such terms and conditions as the committee shall determine.

Bondholders shall be entitled to receive fifty per centum (50%) of the par value of the principal of their bonds in the new preferred stock, and the remaining fifty per centum (50%) of the par value of the principal of their bonds in new common stock. Holders of the certificates of indebtedness shall be entitled to receive new common stock to the par value of their certificates of indebtedness. Bondholders who have not funded their coupons into such certificates of indebtedness shall be entitled to receive an amount of common stock equal to the par value of the certificates of indebtedness which they would have received, had they so funded their coupons.

AND WHEREAS, The committee desires all holders of bonds and certificates of indebtedness to have the privilege of participating

in said plan of reorganization and receiving the advantages and benefits thereof,

NOW, THEREFORE, such of the holders or owners of said bonds and certificates of indebtedness as may become parties hereto in the manner hereinafter provided, in consideration of the premises and the advantages and benefits to accrue to them respectively from a union of interests to protect and enforce their rights, and of one dollar (\$1) each to the other interchangeably in hand paid, receipt whereof is hereby acknowledged, do hereby, each for himself, and not the one for the others, or any of the others, agree with each other, with the committee and its successors, and the depositary, as follows, that is to say:

First. A printed copy of this agreement, signed by the committee and lodged with the depositary, shall be held and taken to be the original agreement.

Second. Holders of bonds and certificates of indebtedness may become parties hereto either by signing this agreement or a copy thereof and delivering it to the committee or any one acting for it, or by depositing their bonds, coupons, and certificates of indebtedness under it with the depositary at any time on or before the nineteenth day of November, 1904; it may be executed in any number of parts, which together shall be deemed to be one instrument.

Third. Bondholders shall receive certificates of deposit for bonds, coupons, and certificates of indebtedness deposited hereunder, such certificates of deposit to be in form approved by the committee. The bondholders depositing their bonds, coupons, and certificates of indebtedness and their transferees shall, by accepting such certificates of deposit, become parties to this agreement with the like effect as if they had signed the same. Depositors whenever required, either at the time of depositing their securities or afterward, shall execute upon demand such transfers, assignments and powers of attorney as may be required by the committee to vest the complete ownership of such deposited securities in the committee or its nominees for the purpose of enabling said committee to carry out its agreement.

The certificates of deposit shall only be transferable subject to the terms and conditions of this agreement and in such manner as the committee shall approve; and upon such transfer all rights of the depositors in respect of the deposited securities represented by such certificates, and all rights under the certificates transferred shall pass to the transferees, and the transferees and holders of such certificates shall for all purposes be substituted in place of the prior holders, subject to this agreement. All

such transferees as well as the original holders of certificates of deposit are embraced under the term "bondholders" as used herein. Each certificate of deposit may be treated by the committee and by the depositary as a negotiable instrument and the holder for the time being may be deemed to be the absolute owner thereof, and of all rights of the original depositor of the securities in respect of which the same was issued and otherwise hereunder, and neither the depositary nor the committee shall be affected by any notice to the contrary. By accepting any such certificate every holder thereof shall become a party to this agreement, with the same force and effect as though an actual subscriber hereto. The term "bondholders" whenever used herein is intended, and shall be construed, to include not only persons acting in their own right but also trustees, committees, guardians, agents and all persons acting in a representative or fiduciary capacity and those represented by or claiming under them, and partnerships, associations, joint stock companies and corporations. No rights hereunder shall accrue in respect of any securities mentioned in the agreement, unless and until the same shall have been subjected to the control of the committee and to the operation of this agreement as herein provided.

The committee may, in its discretion, fix or limit the period or periods of time within which holders may deposit their securities and within which they may become parties to the agreement, and in its discretion, either generally or in special instances may extend or renew the period or periods so fixed or limited for such further periods, and upon such terms and conditions as it may see fit. Holders of securities not deposited within the periods respectively fixed or limited therefor, shall not be entitled to deposit the same or become parties to this agreement, or to share in the benefits thereof, and shall acquire no rights hereunder, except upon obtaining the express consent in writing of the committee, who may in each case withhold or give such consent in its absolute discretion, and upon such terms and conditions as it may see fit.

Fourth. The bondholders do hereby make, constitute and appoint, each for himself, the said Otto T. Bannard, Alfred D. Foster, and Charles F. Ayer, as the committee, and as the true and lawful attorneys of each of them for the purposes herein set forth, with full power and authority to act for and in the name, place, and stead of each of them. The bondholders hereby request the committee to endeavor to carry into practical operation this agreement in its entirety, or in part, to such an ex-

tent and in such manner and with such conditions, exceptions and modifications as the committee shall deem to be for the best interests of the bondholders, and of the properties and securities to be finally embraced in the reorganization. Each and every bondholder, for himself and not for any other, does hereby sell, assign, transfer and set over to the committee, and to its successors and assigns, each and every security deposited hereunder, and every bondholder hereby agrees that the committee shall be, and it is hereby, vested with all the rights and powers of owners of the securities deposited hereunder, including the right to transfer the same into their own names, or into the name of any other person or persons, party or parties it may select; and (without limiting the foregoing provision) it is hereby declared that the committee shall be fully authorized to call, attend, and either in person or by proxy vote the deposited securities at any meeting of stockholders, bondholders, creditors, or otherwise, however convened; to use every such bond, coupon, claim for interest, certificate of indebtedness, certificate of deposit, security, demand or obligation as fully and to the same extent as the owner or holder thereof might or could do; to declare due the principal of any bond or other demand or obligation deposited hereunder, and to revoke any such declaration whenever made; to instruct and direct the trustee of the indenture securing the said bonds, and to confirm in and to give to said trustee all such powers as in the judgment of the committee may be necessary or advantageous in carrying out this agreement or may result to the advantage of the bondholders; to declare due the principal of any bond or other demand or obligation acquired by the committee in pursuance of this plan and agreement and to instruct and direct the trustees of the mortgages securing the bonds of the constituent companies and to confirm in and give to said trustees all such powers as in the judgment of the committee may be necessary or advantageous in carrying out this agreement or may result to the advantage of the bondholders; to apply for the removal of any trustee or the substitution of other trustees; to lend money to the Traction company, or any of the companies whose securities are owned by the Traction company, hereinafter called "constituent companies," or its successor or the new company or a proprietary company in order to enable it to discharge any obligation of the Traction company, or such other company, secured or unsecured by mortgage; to borrow and expend or loan money in its discretion for any of the purposes of this agreement, including the protection of the securities and obligations or any part

thereof held as security for the bonds, or for the protection of the property of the constituent companies or any part thereof, and to reimburse the trustee of the indenture securing the bonds for any moneys advanced by it for such purposes; the committee being expressly authorized to pledge the securities deposited hereunder as collateral for the moneys so borrowed; provided, however, that the committee shall not borrow an amount of money exceeding twenty dollars (\$20) per bond for each bond deposited hereunder; to institute, or to become parties to, any legal proceeding; to apply for the appointment, or for the removal, of receivers and the substitution of other receivers, or for the termination of any receivership, or the delivery of any property to its owners; to enter into any agreements or arrangements whatsoever tending towards, or deemed by it in its discretion likely to promote, the consummation of this agreement; to cause the Traction company or any of the constituent companies to be dissolved, and all or any part of its or their property to be sold, and to do whatever in the judgment of the committee may be necessary to promote or procure the sale as an entirety or the separate sales of any part of the securities and other property involved wherever situated; to adjourn any sale at its discretion; to bid or to refrain from bidding at any sale, either public or private, either in separate lots or as a whole, for any securities or property, or any part thereof, whether or not owned controlled or covered by any deposited security, including or excluding any particular securities, or property or any portion thereof real or personal; to acquire or settle any claims against the Traction company or constituent companies, or any portion of its or their securities and property, and to obtain judgment thereon, and to sell all or any part of the property or securities of said Traction company or constituent companies on execution or through a creditor's bill or otherwise, and at, before, or after any sale, to arrange and agree for the resale of any portion of the securities or other properties which it may decide to sell rather than to retain; to foreclose under the first lien indenture; to hold any securities or property purchased by it, either in the names of the committee, or some of them, or in the names of persons or corporations by it chosen for the purposes of this agreement; to apply any security deposited or embraced hereunder, or any new securities to be issued hereunder in satisfaction of any bid or towards obtaining funds for the satisfaction thereof; to receive and dispose of, in accordance with any of the provisions of this agreement, the new securities to be created and to vote upon all stock or other securities of any

corporation for all purposes in its judgment necessary to carry out the agreement or for the benefit of the new company until the new stock or certificates representing such stock shall be delivered to the bondholders, or whoever shall be entitled to receive the same; to collect, distribute and pay interest if collected upon deposited securities, or to pay interest upon the new securities before their delivery to bondholders and to apply for that purpose any funds collected by it; any such payments to be endorsed on the certificates of deposit. The committee may acquire or extinguish or hold for such time, in such manner and upon such terms as it may deem proper any obligation in the nature of a floating debt, or otherwise, against the Traction company or constituent companies, and any securities held as collateral for any such obligation, and may surrender or cancel any such securities or obligation; nothing in this agreement, however, is intended to constitute or create nor shall it constitute or create any liability towards or duty in favor, or in respect, of any such obligation. All moneys paid under or with reference to this agreement shall be subject to application for any of the purposes of the agreement as may be most convenient, and as from time to time may be determined by the committee, whose determination as to the propriety and purpose in any such application shall be final and conclusive. But nothing in the agreement shall be understood as limiting or requiring the application of specific moneys to specific purposes. The new company may be formed, or the trust agreement executed, in or under the laws of such state or states, territory or territories, as the committee may deem most desirable. Such new company or trust agreement to have and provide for all such powers, privileges, limitations, and conditions as the committee may determine, and the committee shall have the right to select the board of directors or trustees and officers of such new company, or direct the appointment thereof under the trust agreement.

Fifth. The committee agrees to use its best efforts to carry out and to give full force and effect to the plan and agreement of reorganization. The committee may construe this agreement, and its construction hereof or action hereunder in good faith shall be final and conclusive. It may supply any defect or omission, or reconcile any inconsistency in such a manner and to such extent as shall be deemed by it necessary to carry out this agreement properly and effectively. It shall be the sole and final judge as to when and whether the assent of enough of the bondholders shall have been obtained to warrant it in declaring the

plan operative, and attempting to carry the same or any part thereof into effect, and as to when and whether a sufficient number of bonds have been deposited to warrant the execution of the reorganization and the issue of securities thereunder. If this agreement shall not receive sufficient consents to warrant the committee in declaring it operative, the committee shall within a reasonable time endeavor to obtain further consents or modify, change or amend said plan or submit a new plan, such new modified or amended plan to be submitted in the manner hereinafter provided. The committee shall have power whenever it shall deem proper at any time, before the new securities shall have been issued and delivered to the bondholders, or other persons entitled to receive them, to alter, modify, depart from or abandon the plan and agreement of reorganization, or any part thereof. It may at any time or times after any such partial abandonment restore to the plan any abandoned part or parts thereof, and may seek to carry the same into effect as fully as if such part or parts had not been abandoned. It may also attempt to carry the plan into effect rather than to abandon or modify the same, even though it be manifest that as carried out the plan must depart from the original plan or some part thereof. Any change or modification made by the committee shall thereupon become and be part of this plan and agreement, and all provisions concerning the present plan and agreement shall apply to the plan so changed or modified. But in case, after the committee shall have declared this plan operative, of any intentional change or modification of the plan, which in the judgment of the committee shall materially affect the interests of the bondholders, a statement of such proposed change or modification shall be filed with the depository and notice of the fact of such filing shall be sent by mail to the bondholders at their respective addresses as the same shall appear on the books of the depository, and unless within ten days after the mailing of such notice the registered holders of thirty per cent (30%) of the par value of the bonds represented by the outstanding certificates of deposit shall notify the depository in writing that they do not assent to such change, every depositor of securities shall be deemed to have assented to the proposed change and modification and shall be bound thereby, if the same is declared adopted by the committee, as fully and effectually as if he had personally, individually and affirmatively assented thereto.

In case the committee shall abandon this plan and agreement of reorganization, the securities deposited hereunder, or their proceeds, or any of the securities received in respect thereof

and then remaining under the control of the committee, shall be delivered to the several bondholders in amounts representing their respective interests hereunder, upon surrender of their respective certificates, and payment by each bondholder of his proportion of the money borrowed and expenses incurred by the committee, and the committee shall have power, in its discretion, to determine and make such apportionment. In any such case, any securities or property acquired with or on account of deposited securities, or the proceeds thereof when received shall be equitably distributed or adjusted among the respective holders of certificates of deposit. The committee shall not be held liable for loss of any money disbursed or expended by it for the purposes of the agreement, nor for any depreciation in value of any property or securities, and the bondholders shall have no claim to the repayment of any such moneys except to the extent of their ratable shares of such moneys, or the proceeds at the time remaining in the hands of or subsequently collected by the committee.

Sixth. The committee may exercise any power herein conferred either before or after sale. In case of any claim, lien, or obligation, not herein fully provided for, and effecting said Traction company or constituent companies, or any property or securities thereof, the committee may from time to time purchase or acquire the same or make such compromise with respect thereto, or such provision therefor as it may deem suitable, and may use therefor any cash received under the agreement or any securities not expressly required for the bondholders under this agreement. Any action contemplated in this plan to be performed on or after completion of the reorganization may be taken by the committee at any time when it shall deem the reorganization advanced sufficiently to justify such course and the committee as it may deem necessary may defer the performance of any provision of this agreement or may commit such performance to the new company, and may cause the new company to assume any obligations which in the judgment of the committee may be necessary or proper in order to carry out the plan and agreement of reorganization. It may also, in its discretion, set apart and hold in trust, or place in trust with any company, any part of the new securities, or cash or otherwise as it may deem judicious for the purpose of securing the application thereof for any of the purposes of this agreement or the uses of the new company or its successor. Any cash or securities not needed by the committee for the purposes of the plan shall be by it turned over to the new company, and any securities

of the new company so turned over to the new company shall be treated as treasury securities.

Seventh. From time to time for the purpose of carrying this agreement into effect or of obtaining assents thereto, the committee, either generally or in specified instances, may make contracts with any person, syndicate or corporation in respect of any matter connected with the reorganization, and in its discretion, either generally or in specific instances, and upon such general or special terms and conditions as it may deem proper, may arrange to procure the deposit of securities hereunder, or purchase and deposit the same. The committee may employ counsel, agents and all necessary assistants, and may incur and discharge any and all expenses by it deemed reasonable for the purposes of this plan. It may prescribe or approve the form of all securities, mortgages and all instruments at any time to be issued or entered into.

Eighth. The committee shall have the sole control, direction and management of this plan and agreement. It shall have power to make equitable provision for any case of lost or destroyed bonds or coupons or certificates of indebtedness, and to provide for and make such issues of convertible securities as shall be necessary to properly represent any fractional interest in the new securities, and it may, in its discretion, settle for and adjust any such fractional interest in cash. In case it shall deem it advisable for any reason it may issue temporary or interim certificates to represent new securities. The committee may at any time increase the number of members to constitute such committee, and may by a majority vote appoint such additional members and may likewise fill any vacancy, but need not necessarily do so, and the committee, as at any time constituted, notwithstanding any vacancy, shall have all the powers, rights and interests of the committee as originally formed. Any member of the committee may resign by giving notice of his resignation in writing to the chairman of the committee, or to all the other members. The affirmative vote of the majority of the members of the committee, as at any time constituted, shall be necessary for the passage of any resolution (but a member of the committee may vote by proxy at any meeting of the committee), and such affirmative vote of the majority shall be final and binding upon the committee. It shall not be necessary for the members of said committee formally to meet in order to take any action, provided they agree unanimously on any matter and embody such action in writing signed by every member of the committee.

Ninth. The committee undertakes to endeavor to execute this plan and agreement of reorganization, but neither it, nor any of the members thereof, nor the depositary assume any personal responsibility for the execution thereof or any part thereof, or for the result of any steps taken or acts done for the purposes thereof. Neither the committee, nor any member thereof, nor the depositary shall be personally liable for any act or omission of any agent or employee selected by them, or any of them, or for any error of judgment or mistake of law or fact, or in any case, except for its or their own willful misconduct. The committee may act by any committee or agents, and may delegate any authority, as well as discretion, to any committee or agent. It shall have the right to form or procure the formation of any syndicate or syndicates, or to enter into any underwriting agreement which it may deem necessary or advantageous for carrying out the purposes of this plan, upon such terms and conditions as it may deem advisable. The terms of any such syndicate or underwriting agreement shall be fixed by the committee and as so fixed shall be binding and conclusive upon all parties. The committee, or any member thereof, and the depositary may be or become pecuniarily interested in any contracts, property or matters which this agreement concerns, including participation in or under any syndicate or underwriting agreement as managers, members, subscribers, or otherwise. Any direction given by the committee shall be full and sufficient authority for any action of the depositary, the trustee of the indenture securing the bonds, the trustees of any of the mortgages on the properties of the constituent companies, of any committee, attorneys or agents. The depositary shall incur no liability for anything done or permitted at the request or direction of the committee, the securities deposited being intended to be wholly at the order and under the control of the committee, nor shall the depositary incur any liability whatsoever except for its own willful misconduct. All directions or instructions given to, or powers conferred upon, or acts by, the depositary, the trustee under the indenture securing said bonds, or the trustees of any of the mortgages on the properties of the constituent companies, shall be binding upon the bondholders, notwithstanding the termination of this plan, or the abandonment or modification thereof, or the return of the securities. The accounts of the committee shall be filed with the board of directors of the new company within one year after the reorganization shall have been completed, and when approved by such board of directors shall be final, binding and conclusive upon all parties having any

interest therein, and thereupon the committee shall be discharged. The acceptance of the new securities by any depositor shall estop such depositor from questioning the conformity of such securities in any particular to any provisions of the plan, and the acceptance of new securities by holders of a majority in amount of certificates of deposit shall constitute full ratification of all the acts and proceedings of the committee.

Tenth. The securities deposited under this agreement, and all securities and claims purchased or otherwise acquired under this agreement, shall remain in full force and effect for all purposes, and shall not be deemed merged, satisfied, released or discharged by the delivery of new securities, and no legal right or lien shall be deemed released or waived; but said bonds and other claims, and any judgment upon any of such claims, including claims and judgments for deficiencies, and all liens and equities shall remain unimpaired, and may be enforced by the committee, or by any assignee of the committee, until paid or satisfied in full or expressly released. Neither the committee nor any bondholders of the Traction company shall, by becoming parties to this agreement, release, surrender, waive or merge any lien, right or claim which they may have in favor of any other creditors or any stockholders of such company, and all such liens, rights or claims shall vest unimpaired in the committee and their assigns. No right is conferred or created hereby, nor is any liability or obligation incurred by this agreement, or assumed hereunder in favor of any bondholder or other creditor or of any holder of any claim whatsoever against the Traction company, nor in favor of any company now existing or to be hereafter formed (whether such claim be based on any bonds, coupons, stocks, securities, lease, contract, guaranty or otherwise), with respect to any securities deposited under this agreement, or any moneys paid to or received by the committee or by the depositary hereunder, or with respect to any property acquired by purchase at any foreclosure or other sale, or with respect to any new securities to be issued hereafter, or with respect to any other matter or thing, but this agreement shall be construed as strictly an agreement between the parties and as solely affecting and relating to the committee, depositary, and depositors hereunder.

Eleventh. This plan shall bind and benefit the several parties hereto, their and each of their survivors, heirs, executors, administrators, successors and assigns.

Twelfth. The depositary or any depositary hereunder may resign or may at any time be removed by the committee. A

resignation of the depositary shall become effective by a notice of a desire of the depositary to resign given to the chairman of the committee, or to any two other members of the committee, at least fifteen (15) days before such resignation becomes effective, unless the committee shall waive such notice and accept a shorter notice. A successor in trust as depositary may be appointed by the committee in the event of the resignation or removal of the depositary. Such successor shall be vested with all the powers, rights, duties and obligations of the original depositary appointed hereunder with the same effect as if such depositary so appointed had been originally a party to this instrument.

The depositary who shall resign or be removed shall deliver to the new depositary who may be appointed, the securities deposited with it by the depositors, or the securities deposited with it by the committee for delivery to the depositors, and the depositary for the time being shall comply with the obligations of any predecessor depositary issuing receipts hereunder with the same effect as though issued by such depositary.

The term "depositary" wherever used in this instrument shall refer in every instance to the depositary who may at the time be acting as such under this agreement.

IN WITNESS WHEREOF, The members of said committee have hereunto set their hands, and the other parties hereto have hereunto set their hands or have become parties hereto by depositing bonds, coupons, and certificates of indebtedness hereunder, the day and year first above written.

OTTO T. BANNARD,
Chairman.

ALFRED D. FOSTER,
CHARLES F. AYER,
Committee.

INCIDENTAL EXPENSES.

The public statutes place at the disposal of the board for services of stenographers and experts and the cost of stationery, express, and postage, the sum of \$1000 annually. Of this amount there were expended in the year ending June 30, 1904, the following sums:

Stenographers and typewriters . . .	\$530.90
Express	53.09
Office supplies	45.05
Postage	20.25
Telegraph and telephone	12.88
	<hr/>
	\$662.17

TENTH REPORT

(FIFTH BIENNIAL)

OF THE

BOARD OF COMMISSIONERS OF LUNACY

FOR THE

STATE OF NEW HAMPSHIRE

FOR THE

TWO FISCAL YEARS ENDING SEPTEMBER 30, 1904.

VOLUME II - - PART V.

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STATE OF NEW HAMPSHIRE.

OFFICE OF THE COMMISSIONERS OF LUNACY,

STATE HOUSE, October 1, 1904.

*To His Excellency the Governor and the Honorable
Council:*

In conformity to the laws of the state of New Hampshire,
I have the honor to present herewith the tenth report of the
Board of Commissioners of Lunacy, for the two fiscal years
ending September 30, 1904.

Respectfully submitted,

Irving A. Watson

Secretary.

MEMBERS OF THE BOARD.

Gov. NAHUM J. BACHELDER	.	.	.	Andover.
Att'y-Gen. E. G. EASTMAN	.	.	.	Exeter.
ROBERT FLETCHER, C. E.	.	.	.	Hanover.
G. P. CONN, M. D., <i>President</i>	.	.	.	Concord.
C. S. COLLINS, M. D.	.	.	.	Nashua.
IRVING A. WATSON, M. D., <i>Secretary</i>	.	.	.	Concord.

REPORT.

Herewith is presented the tenth report of the Board of Commissioners of Lunacy, the same being the fifth biennial return, for the fiscal years 1903 and 1904.

The following tables are appended :

Table 1.—Commitments to the several institutions for the year 1903.

Table 2.—Commitments to the several institutions for the year 1904.

Table 3.—Discharges for the year 1903.

Table 4.—Discharges for the year 1904.

Table 5.—Deaths for the year 1903.

Table 6.—Deaths for the year 1904.

Table 7.—Persons committed to the New Hampshire State Hospital by order of the commissioners of lunacy, for remedial treatment, not including those whose complete record is given in former reports.

Table 8.—General statement of conditions and results.

Table 9.—Number and condition of those discharged from remedial treatment.

Tables 10 and 11.—Recapitulation of the number of commitments, discharges, and deaths at the institutions named, during the two years ending September 30, 1904, also the number of inmates remaining at the latter date, as shown by the returns made to the board.

Table No. 12.—Number of inmates at New Hampshire State Hospital and at the several county asylums at the end of each fiscal year, from 1889 to 1904, inclusive.

It is a pleasure to announce that, after a protracted and somewhat spirited discussion during the session of the legislature of 1903, the policy of the state was, we trust, finally settled with respect to the care of the indigent insane. Gradually these cases are to be transferred from all the county institutions to the New Hampshire State Hospital.

The limitation of the number to receive remedial treatment at the hands of this board was removed, with the result of giving such treatment to many persons who needed it, but who were before restricted from the privilege under the statutes. The "remedial treatment" list has, therefore, been very greatly enlarged during the past two years, as will be seen by reference to tables in this report.

The board has placed a broad interpretation upon the term "remedial treatment," and under such interpretation has removed some patients from county almshouses in order to place them under better sanitary conditions. Some of these cases will be dropped from the remedial treatment list in 1905, and be credited to the quota of the county from which they were taken. It will be seen that the act of the legislature referred to gives this board authority to remove dependent insane persons from the several county almshouses, after January 1, 1905, to the New Hampshire State Hospital, the removal to be made *pro rata* according to population.

During the past two years two new buildings have been completed and made available for use at the New Hampshire State Hospital, which has afforded additional facilities for the reception of patients. The records show that for the year ending September 30, 1904, there were ninety more patients at that institution than on the corresponding date, 1903. The accommodations are still far from adequate to care for all the indigent insane who will have to be transferred from the county almshouses, and if the law referred to is to be carried out, it will be necessary for the legislature to provide more buildings for that purpose. The text of the bill referred to is as follows:

AN ACT to provide for the care and support of the dependent insane by the state.

Be it enacted by the Senate and House of Representatives in General Court convened :

SECTION 1. The state from and after the first day of January, 1909, shall have the care, control, and treatment of all insane persons who are now cared for by the various counties at the county almshouses; and no county shall hereafter establish any asylum or other additional structure for the care of the insane, nor after said date maintain any institution for the insane, or be liable for the board, treatment, care, or act of any insane person.

SECT. 2. From and after the passage of this act, the state board of lunacy may order the removal of all such dependent insane persons to the state hospital for remedial treatment as in their judgment seems proper, and such persons shall be supported at the expense of the state from money in the treasury not otherwise appropriated.

SECT. 3. After January first, 1905, as rapidly as accommodations can be provided, the state board of lunacy shall begin making transfers from the various county almshouses to the state hospital, of such insane persons as in their judgment seem most suitable, and all such patients, after their removal to the state hospital, shall be maintained therein at the expense of the state. Such transfers shall be made by the state board of lunacy pro rata to the population of the several counties.

SECT. 4. This act shall take effect upon its passage. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

Approved, March 7, 1903.

The number of insane persons at the New Hampshire State Hospital and at the several county almshouses, combined, on September 30, 1904, was eight hundred and twenty-six, as reported by the superintendents of these institutions. This is a larger number than ever before returned in a single year. A glance at Table 12 will show the number of inmates at each of the institutions named for the past sixteen years, and it will be seen that there has been practically a progressive increase in the number of the insane.

During the two years covered by this report three hundred and sixty-nine persons have received remedial treatment at

the New Hampshire State Hospital by order of this board, and on September 30, 1904, two hundred and forty-eight patients were receiving such treatment there.

Over fifteen per cent. of the state cases who have received remedial treatment during the past two years have been discharged "recovered," and nearly seven per cent. as "improved." Statistics covering these points will be found in Tables 8 and 9.

COMMITMENTS.

TABLE No. 1.—COMMITMENTS.

Persons committed to the New Hampshire State Hospital during the year ending September 30, 1903.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, married, or widowed.		
Frank Castagne.....	21	M.	..	W.	Single.....	Oct. 2, 1903	Concord.
Lacy J. Sherman.....	66	..	F.	..	..	" 2, "	Hanover.
Helen Hart.....	65	..	F.	..	..	" 4, "	Dover.
Charles C. Blanchard.....	65	M.	..	..	Widowed.....	" 4, "	Franklin.
Charlotte Collins.....	74	..	F.	..	Widowed.....	" 13, "	Concord.
Lydia A. Orne.....	65	..	..	..	Married.....	" 14, "	Wolfeborough.
John Sheehan.....	43	M.	..	..	..	" 17, "	Taunton.
Charles C. Eastman.....	37	..	..	..	..	" 18, "	Nashua.
Daniel J. Sawyer.....	52	..	..	..	..	" 21, "	Pembroke.
Fred H. Wiggin.....	34	..	..	..	Widowed.....	" 23, "	Epping.
Arthur H. Parker.....	15	..	..	..	Single.....	" 24, "	Troy.
Carrie Collins.....	31	..	F.	..	Married.....	" 27, "	Nashua.
Catherine Quinnan.....	60	..	..	..	Widowed.....	Nov. 1, "	Fortsmouth.
Edward Duckworth.....	69	M.	F.	..	Married.....	" 3, "	Surry.
Mary C. Stillings.....	36	M.	F.	..	Divorced.....	" 4, "	Barrington.
Arthur Hinton.....	56	..	..	..	Single.....	" 5, "	Providence, R. I.
George W. Anderson.....	..	..	F.	..	Married.....	" 5, "	Manchester.
Joséphine Trudeau.....	27	..	..	..	..	" 5, "	Nashua.
Walter S. Cotton.....	40	M.	..	..	Single.....	" 6, "	Rochester.
Nellie M. Newcomb.....	59	..	F.	..	Married.....	" 6, "	Nashua.
Mary F. Marsh.....	62	..	..	..	..	" 6, "	Rochester.
Hiram A. Mace.....	33	M.	..	..	Widowed.....	" 6, "	Dover.
Frank Le Sarge.....	35	..	..	..	Married.....	" 10, "	Berlin.
John W. Malloy.....	24	..	..	..	Single.....	" 11, "	Manchester.
Arthur L. Cahill.....	42	..	F.	..	..	" 12, "	Dover.
Albert M. Glass.....	..	..	..	..	..	" 12, "	Lebanon.
Mary Cutter.....	..	..	..	..	..	" 12, "	..

	39	F.	W.	Married	Italy	Nov.	13, 1903
Mary Morano.....	39	F.		Single	Canada	Concord.	Concord.
Arthur Desjere.....	40	M.		Married	New Hampshire	Manchester.	Manchester.
Arthur Ballou.....	40	M.		Married	Sweden	Nashua.	Nashua.
Selma Cole.....	35	M.		"	Maine	Middleton.	Middleton.
John W. Gibbs.....	72	F.		Single	New Hampshire	Warner.	Warner.
Nellie Dowlin.....	39	F.		Married	Canada	Gilmanton.	Gilmanton.
Catherine A. Harris.....	42	"		Single	New Hampshire	Littleton.	Littleton.
Mabel I. Weeks.....	44	"		Married	Canada	Manchester.	Manchester.
Aldea Vachon.....	25	M.		"	England	Concord.	Concord.
Richard Beers.....	73	M.		"	Massachusetts	East Concord.	East Concord.
Bernice Suborn.....	20	F.		Single	England	Rosawen.	Rosawen.
Anant Betham.....	33	M.		Single	New Hampshire	Hollis.	Hollis.
John W. Howe.....	30	"		Widowed	Vermont	Manchester.	Manchester.
John B. Clarke.....	23	F.		Single	New Hampshire	Attentown.	Attentown.
Delia Guilbert.....	47	M.		Widowed	New York	Chesterfield.	Chesterfield.
Leslie Hubbard.....	23	F.		Married	Wisconsin	Keene.	Keene.
Ellen Smith.....	65	"		Single	New Hampshire	Concord.	Concord.
Bertha Wells.....	32	"		Married	"	Greenland.	Greenland.
Sarah Rand.....	18	M.		Single	"	Rutney.	Rutney.
Charles H. Learned.....	50	M.		Single	"	Stoddard.	Stoddard.
Charles X. Cutter.....	52	"		Divorced	"	Milford.	Milford.
Carroll D. Johnson.....	24	"		Single	Maine	South Berwick.	South Berwick.
Edith F. Ricker.....	36	F.		Single	New Hampshire	Portsmouth.	Portsmouth.
Clara A. Hazel.....	43	M.		Widowed	"	Concord.	Concord.
Frank J. Caswell.....	39	"		Single	New Hampshire	Larocia.	Larocia.
George F. Moore.....	61	F.		Married	Canada	Newcastle.	Newcastle.
Julia White.....	67	M.		Single	Maine	Lebanon.	Lebanon.
Peter Le Mar.....	61	"		Married	New Hampshire	Somersworth.	Somersworth.
James H. Wilson.....	38	"		Married	"	Rosawen.	Rosawen.
Frank A. Bossett.....	25	"		Widowed	England	Barlett.	Barlett.
Amos C. Nute.....	35	F.		Married	New Brunswick	Newport.	Newport.
Annie Eagan.....	32	"		Single	Ireland	Concord.	Concord.
Mary Morrison.....	19	M.		Single	Sweden	Dover.	Dover.
Michael McCarty.....	50	F.		Married	Massachusetts	Concord.	Concord.
Emil Johnson.....	44	M.		Married	Vermont	Wentworth.	Wentworth.
Katherine Vondrey.....	34	F.		"	Massachusetts	Lebanon.	Lebanon.
Peter Duplessie.....	44	"		"	Boston	Manchester.	Manchester.
Josephine K. Kelley.....	43	M.		Married	New Hampshire	Clamont.	Clamont.
Isabel Smith.....	43	"		"	Canada	Ossipee.	Ossipee.
George A. Roles.....	49	"		Single	"	Concord.	Concord.
Michael Fournier.....	62	"		Single	New Hampshire	West Swanzy.	West Swanzy.
Zoel Emery.....	41	"		Married	"	Concord.	Concord.
Arthur F. Demott.....	36	"		Married	New Hampshire	Concord.	Concord.
Enoch J. Marston.....	56	"		Married	"	Sandwich.	Sandwich.

TABLE No. 1.—*Continued.*—COMMITMENTS.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.			
Evelyn J. Foster.....	26		F.	W	Canada.....	Jan. 25, 1903	East Concord.
Jennie Whittemore.....	25		"	"	New Hampshire.....	" 26, "	Manchester.
Homer D. Trask.....	33	M.	"	"	Canada.....	" 27, "	Keene.
Louis Champagne.....	41	"	"	C	Kentucky.....	" 27, "	Manchester.
George Banks.....	56	"	"	W	Canada.....	" 27, "	Manchester.
Octave LeClerc.....	67		F.	"	New Hampshire.....	" 29, "	Claremont.
Mary J. Hastings.....	42		"	"	"	" 30, "	Antrim.
Caroline E. Whittle.....	34	M.	"	"	Canada.....	Feb. 2, "	Allenstown.
Hannie F. Whitehouse.....	39		F.	"	Maine.....	" 4, "	Dover.
Julia A. Price.....	67		"	"	"	" 5, "	Bradford.
Annie Agnes Gibbons.....	19		"	"	Ireland.....	" 6, "	Manchester.
Flora Hanning.....	52		"	"	P. E. Island.....	" 6, "	Fabyans.
Charles Wardour.....	52		"	"	New Hampshire.....	" 7, "	"
Samuel D. Isham.....	66	M.	"	"	"	" 11, "	Gilsun.
James Kane.....	76	"	"	"	Ireland.....	" 14, "	Manchester.
Jonathan P. Kittredge.....	62	"	"	"	New Hampshire.....	" 14, "	Concord.
Charles C. Cheney.....	51		"	"	"	" 17, "	Plaistow.
Mabel Nash.....	22		F.	"	Connecticut.....	" 17, "	Manchester.
Mary Pinkham.....	22		"	"	Maine.....	" 18, "	Derry.
Marian E. McArthur.....	33		"	"	England.....	" 19, "	Swanzy.
Sarah Melissa Goodhue.....	51		"	"	New Hampshire.....	" 23, "	Portsmouth.
Julia A. Fredick.....	35		"	"	Ireland.....	" 24, "	Somersworth.
William Nimmo.....	55	M.	"	"	Scotland.....	" 25, "	Montreal, P. Q.
Margie P. Reid.....	52		F.	"	Canada.....	" 28, "	North Walpole.
Margaret Collins.....	14		"	"	New Hampshire.....	" 28, "	Newport.
John Ravina.....	20	M.	"	"	Finland.....	" 2, "	Somersworth.
Rose Dunais.....	29		F.	"	Canada.....	" 6, "	"
Inez C. Willis.....	21		"	"	New York.....	" 9, "	Concord.

43	M.	W.	Single.	Canada.	March	10, 1903	Manchester.
Alphonse Jénelles			Married	New Brunswick	"	12	Berlin.
Abraham C. Humphreys	"		"	New Hampshire	"	13	Boz.
Warren Morgan	60	F.	Single	England	"	13	Concord.
Bridget Tierney	58	M.	Married	New Hampshire	"	13	Penacook.
Edwin P. Blood	53		Single	"	"	13	New London.
William Coleman	17	F.	"	"	"	13	Concord.
Ella Ordway	35		Married	"	"	14	Pittsfield.
Mary A. Sullivan	37	M.	"	"	"	17	Franklin Falls.
Willis J. Alexander	60	F.	Widowed	Vermont	"	17	Plainfield.
Abbie C. Crossfield	46	M.	Married	New Hampshire	"	20	Keene.
Howard C. Holt	35	"	"	"	"	20	Manchester.
Charles W. Tobin	72	"	"	"	"	20	Bartlett.
Elbridge G. Taska	21	F.	Single	"	"	21	Manchester.
Frida Schwalzer	71	M.	Widowed	"	"	24	Hillsborough Bridge.
Edwin B. Morse	20	F.	Single	"	"	25	Nashua.
Agnes Dowling	63	M.	Married	Maine	"	27	Gorham.
Otis T. Hooper	76	"	"	New Hampshire	"	30	Iacoma.
Frank Hoyt	37	"	Single	"	"	31	Exeter.
John O'Neil	19	F.	"	Canada	April	2	Nashua.
Rose Belanger	53	M.	Married	New Hampshire	"	2	Manchester.
William T. Little	28	"	"	Canada	"	3	Manchester.
Sarah L. Melancon	57	F.	"	New York	"	4	Nashua.
Myra M. White	42	M.	"	Russia	"	7	Keene.
John Pushniss	45	"	"	Massachusetts	"	10	Keene.
James H. Tucker	53	"	Widowed	New Hampshire	"	10	Farmington.
Warren E. Kimball	28	"	Single	"	"	13	Franklin.
Nat W. Pillsbury	27	"	Married	"	"	13	East Concord.
Walter I. Abbott	20	F.	Single	"	"	17	Portsmouth.
Alma G. Underhill	51	M.	Widowed	"	"	21	Hillsborough.
Jacob B. Whittemore	46	"	Married	"	"	22	Rollinsford.
Fred S. Hayes	57	"	Widowed	"	"	23	Meredith.
George F. Wiggin	37	F.	Married	"	"	27	Sullivan.
Eva A. Thompson	30	"	"	Ireland	"	29	Sullivan Co. Farm.
Nora Wright	44	"	Single	Massachusetts	"	30	Salem.
Julia E. Sargent	23	"	"	Canada	May	1	Somersworth.
Idiana Guerin	33	"	"	New Hampshire	"	2	Salem.
Emma Peabody	22	M.	"	"	"	2	Manchester.
Wilnot P. Tuson	76	"	Widowed	"	"	5	Henniker.
James H. Dowlin	63	"	Married	"	"	8	New Hampton.
Winthrop G. Torsey	26	F.	Single	"	"	11	East Concord.
Evelyn J. Foster	34	M.	"	Maine	"	12	Concord.
J. H. Sullivan	46	F.	Married	New Hampshire	"	13	Dover.

TABLE No. 1.—Continued.—COMMITMENTS.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, married, or widowed.		
Walter D. Hardy	49	M	.....	W	Divorced	May	Concord.
Jacob N. Woodward	75	"	.....	"	Single	"	Lyndeborough.
H. Willis Little	41	"	F.	"	Married	"	Littleton.
Selina Chavois	54	"	F.	"	Single	"	New Ipswich.
Helen L. Ticknor	65	"	"	"	Married	"	East Lebanon.
Ann Y. Muzzey	55	"	"	"	Divorced	"	Orford.
Carrie S. Putney	45	"	"	"	Single	June	Sutton.
Fred Finneo	28	M	.....	"	Married	"	Hanover.
Joseph P. Weeks	68	"	"	"	Single	"	Jefferson.
Eva Marie Gagnon	28	"	"	"	Single	"	Nashua.
Sheldon T. Merrill	58	"	"	"	Married	"	Haverhill.
Arthur Worthley	33	"	"	"	Single	"	Goffstown.
Alice M. Haselton	38	"	F.	"	Married	"	Hudson.
Melissa A. Hazelton	59	"	"	"	Single	"	Canaan.
Mina Suzor	17	"	"	"	Single	"	Lebanon.
Flora Rugles	40	"	"	"	Married	"	Dalton.
Carrie M. Tibbetts	25	"	"	"	Single	"	Rochester.
George W. Ballou	80	M	.....	"	Widowed	"	West Derry.
Cyrus Smith	68	"	"	"	"	"	Dover.
Annette A. Lawson	47	"	F.	"	Married	"	Manchester.
Benjamin E. Badger	72	M	.....	"	Single	"	Concord.
Martin Toban	21	"	"	"	"	"	Concord.
Kate O'Neil	20	"	F.	"	"	"	Concord.
Eva J. Porter	19	"	"	"	"	"	Concord.
Hervey Marion	19	M	.....	"	"	"	Concord.
Frank J. Caswell	38	"	"	"	"	"	Concord.
Alroy A. Lawrence	41	"	"	"	"	"	Concord.
Helen L. Story	43	"	F.	"	"	"	Concord.
Margaret O'Brien	36	"	"	"	"	"	Concord.

[illegible]

TABLE No. 1.—Continued.—COMMITMENTS.

NAMES.	AGE, SEX, AND CONDITION.					Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, married, or widowed.			
Hattie B. Sanborn.....	31	.....	F.	W.	Single.....	New Hampshire	Aug. 24, 1903	London.
M. Elizabeth Fogg.....	64	M.	"	"	Married....	England	" 25, "	Meredith.
Hyam Hyams.....	59	"	F.	"	Single.....	New Hampshire	" 29, "	Manchester.
Sarah E. Rundlett.....	57	M.	"	"	Married....	Vermont.....	" 2, "	Merrimack.
Ralph Myers.....	16	"	F.	"	Single.....	England.....	" 8, "	Littleton.
Teresa Moran.....	62	"	"	"	"	New Hampshire	" 9, "	Penacook.
Lucy A. Baldwin.....	72	M.	"	"	"	"	" 11, "	Nashua.
Daniel O. Smart.....	28	"	F.	"	"	Canada	" 15, "	Moultonboro.
Emma F. Brown.....	48	"	"	"	"	New Hampshire	" 17, "	Barrington.
Concorde Burgoin.....	23	M.	"	"	Married....	New Hampshire	" 17, "	Nashua.
Ira J. Hutchinson.....	65	"	F.	"	Single.....	England.....	" 21, "	Concord.
Marinda Lamprey.....	63	"	"	"	Married....	Quebec.....	" 21, "	Orford.
Daniel Caverly.....	40	M.	"	"	"	New Hampshire	" 22, "	Meredith.
Fred L. Wilder.....	29	"	"	"	Married....	England.....	" 23, "	Windham.
William Garland.....	55	"	"	"	"	Quebec.....	" 24, "	Portsmouth.
Thomas Richardson.....	75	"	"	"	Single.....	Maine.....	" 24, "	"
Thomas Hubley.....	46	"	"	"	Widowed...	New Hampshire	" 24, "	"
Ebenezer Emerson.....	70	"	"	"	"	"	" 24, "	Northwood.
Ira Colby.....	60	"	"	"	Single.....	New Hampshire	" 24, "	Derry.
Louis Elsner.....	51	"	"	"	"	Mahe.....	" 24, "	"
Eva Haley.....	30	"	F.	"	Married....	New Hampshire	" 26, "	Nashua.
Mary Frost.....	53	"	"	"	"	Mahe.....	" 29, "	Rollinsford.
John H. Boutelle.....	38	M.	"	"	"	New Hampshire	" 29, "	Antrim.

Persons committed to the Rockingham County Farm during the year ending September 30, 1903.

Clara White.....	20	.....	F.	W.	Single.....	American.....	Oct.	6, 1902	Concord, State Hos'tal
Harry Wilson.....	34	M.	.....	.....	.....	.....	Jan.	2, 1903	Londonberry.
Martha Towle.....	87	.....	F.	.....	Widowed..	.....	Feb.	26, "	Epping.
Harriet Hill.....	79	.....	.....	.....	.....	.....	Mar.	7, "	East Kingston.
John Rowe.....	35	M.	.....	.....	Single.....	.....	"	28, "	Seabrook.

Persons committed to the Strafford County Almshouse during the year ending September 30, 1903.

Orrin Kimball.....		M.		W.	Single.....	American...	April	3, 1903.	

Persons committed to the Belknap County Almshouse during the year ending September 30, 1903.

Frank J. Hoitt.....	74	M.	F.	W.	Married....	American.....	May	25, 1903	Lakeport.
Marguerette O'Brien.....	38	"	"	"	Single.....	Irish.....	June	8, 1903	Laconia.

Persons committed to the Carroll County Almshouse during the year ending September 30, 1903.

Amos C. Nute.....	51	M.		W.	Married....	American.....	Dec.	12, 1902	Bartlett.

Persons committed to the Merrimack County Almshouse during the year ending September 30, 1903.

James Clark.....	46	M.	W.	Widowed.....	England.....	Feb.	25, 1903	N. H. State Hospital.
John McGinnis.....	84	"	"	Single.....	Ireland.....	"	25, "	"
William Solon.....	42	"	"	"	New Hampshire.....	"	25, "	"
George Shepard.....	24	"	"	"	"	"	25, "	"
George W. Symonds.....	40	"	"	"	"	"	25, "	"
Fred R. Robinson.....	30	"	"	"	"	"	25, "	"
Jacques Marthier.....	61	"	"	"	France.....	"	25, "	"
George Robinson.....	33	"	"	"	New Hampshire.....	"	25, "	"
F. P. Blood.....	56	"	"	Married.....	"	"	25, "	"
William Coleman.....	51	"	"	Single.....	"	"	25, "	"

TABLE No. 1.—Continued.—COMMITMENTS.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, married, or widowed.		
Edward Lambert.....	27	M.	.....	W.	Single.....	Feb.	N. H. State Hospital.
Frank Castagne.....	21	"	.....	"	"	25, " 1903	"
George W. Brown.....	29	"	.....	"	"	25, " "	"
Peter Anderson.....	46	"	.....	"	"	25, " "	"
Olive Archibald.....	66	"	F.	"	"	25, " "	"
Jane Leavitt.....	54	"	"	"	"	25, " "	"
Ida Edmunds.....	27	"	"	"	"	25, " "	"
Lizzie Parkinson.....	39	"	"	"	"	25, " "	"
Jane Colbath.....	46	"	"	"	"	25, " "	"
Mary Drake.....	63	"	"	"	Married.....	25, " "	"
Mary Heath.....	50	"	"	"	Single.....	25, " "	"
Jane Patterson.....	49	"	"	"	Widowed.....	25, " "	"
Bridget Tierney.....	51	"	"	"	Single.....	25, " "	"
Julia Twomey.....	59	"	"	"	"	25, " "	"
Ida Anderson.....	40	"	"	"	"	25, " "	"
Julia Crowley.....	61	"	"	"	Married.....	25, " "	"
Mary Quimby.....	38	"	"	"	Widowed.....	25, " "	"
Annie Farmanian.....	32	"	"	"	Married.....	25, " "	"
Mary Hannigan.....	63	"	"	"	"	25, " "	"
Matilda McCarthy.....	76	"	"	"	Single.....	25, " "	"
Martha Chamberlin.....	58	"	"	"	Divorced.....	25, " "	"
Emma J. Hill.....	55	"	"	"	Single.....	25, " "	"
Salome Little.....	42	"	"	"	"	25, " "	"
Emma Brown.....	49	"	"	"	"	25, " "	"
Susan Pickard.....	41	"	"	"	"	25, " "	"
Emma Putnam.....	44	"	"	"	"	25, " "	"
Cora Batchelder.....	38	"	"	"	Widowed.....	25, " "	"
Mary Jane Wadleigh.....	66	"	"	"	Single.....	Sept. 8, " 1903	Alms-house.

TABLE No. 1.—Continued.—COMMITMENTS.

Persons committed to the Coös County Almshouse during the year ending September 30, 1903.

NAMES.	AGE, SEX, AND CONDITION.					Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, married, or widowed.			
Almedia Perkins	20	.....	F.	W.	Married....	French.	May 27, 1903	Berlin.
Mary Jolin.....	38	.....	"	"	"	"	July 22, "	Whitefield.
Charley Goodna.....	30	M.	.....	.....	Single.....	American.....	Aug. 11, "	Gorham.

TABLE No. 2.—COMMITMENTS.

Persons committed to the *New Hampshire State Hospital during the year ending September 30, 1904.*

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, married, or widowed.		
Nellie Quimby	44	M.	F.	W.	Single	Oct.	Franklin.
Warren K. French	30	"	"	"	Married	"	Westmoreland.
Mary Maher	44	M.	F.	"	"	"	Laconia.
Walter B. Bannigan	40	"	"	"	Single	"	Manchester.
Edward F. Welch	28	"	"	"	"	"	Portsmouth.
Auguste Fillion	19	"	"	"	"	"	Somersworth.
Wilbert Gibson	22	"	"	"	"	"	Manchester.
Hugh Clifford	14	"	"	"	"	"	Concord.
Mary Blanc	44	"	F.	"	"	"	"
Albert H. Nelson	52	M.	"	"	Single	"	Portsmouth.
Jessie Inglis	41	"	F.	"	"	"	Manchester.
Ernestine DuFour	22	"	"	"	"	"	Nashua.
Elmer J. Bideout	43	M.	"	"	Married	"	Brookline.
Anna E. Fogg	40	"	F.	"	"	"	Sandywich.
Charles H. Miller	55	M.	"	"	Single	"	Farmington.
Bridget Lee	30	"	F.	"	"	"	Nashua.
George P. Dunham	53	M.	"	"	"	"	Saunton.
Everett Newell	32	"	"	"	Married	"	Keene.
Mary F. Bickford	74	"	F.	"	Widowed	"	Epson.
Mary Lovering	42	"	"	"	Single	"	Manchester.
Elizabeth Mack	86	"	"	"	Widowed	"	Hampton.
Mary Quinn	30	"	"	"	Single	"	Manchester.
Martha J. Fox	40	"	"	"	Married	"	Dover.
Francis H. Weed	60	M.	"	"	Widowed	"	Newport.
Herbert E. Farnham	47	"	"	"	Single	"	Wakefield.
Ellen F. Elliott	53	"	F.	"	Married	"	Rollinsford.
Susie F. Babcock	40	"	"	"	Single	Nov.	West Derry.

TABLE No. 2.—Continued.—COMMITMENTS.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, married, or widowed.		
Nellie T. Healey	28	M.	F.	W.	Single.....	Nov. 3, 1903	Manchester.
Felix Sears.....	23	"	"	"	Widowed.....	" 4, "	Nashua.
Louis Dion.....	29	"	"	"	Single.....	" 5, "	Rindge.
James Good.....	60	"	F.	"	Married.....	" 10, "	Fremont.
Mary E. Campbell.....	57	"	"	"	Single.....	" 10, "	Exeter.
Sarah J. Perkins.....	56	"	"	"	Married.....	" 10, "	West Derry.
Margaret Roberts.....	22	"	"	"	"	" 13, "	Pittsfield.
Malvina Langevin.....	39	M.	"	"	Single.....	" 13, "	Durham.
Edward F. Welch.....	28	"	"	"	Married.....	" 14, "	Peterborough.
James A. Palmer.....	42	"	"	"	Widowed.....	" 16, "	Gilsun.
John P. Welch.....	65	"	F.	"	Single.....	" 17, "	Canterbury.
Mabel E. Stevens.....		"	"	"	"	" 18, "	West Derry.
Charles Peverly.....	45	M.	"	"	Widowed.....	" 18, "	Bristol.
John F. Linton.....	76	"	"	"	Single.....	" 22, "	Suncook.
Willie H. Highland.....	24	"	"	"	Married.....	" 23, "	West Lebanon.
Thomas Maguire.....	40	"	"	"	"	" 26, "	West Derry.
Eleanor F. Farnsworth.....	53	"	F.	"	"	" 28, "	Nashua.
Jennie Piper.....	58	"	"	"	"	" 1, "	Merrimack.
Nellie E. Badger.....	26	"	"	"	Widowed.....	Dec. 1, "	Concord.
Julia Croyley.....	63	M.	"	"	"	" 1, "	Lakeport.
Michael Delaney.....		"	"	"	Married.....	" 3, "	Lancolin.
Gustave A. Billet.....	46	"	"	"	Single.....	" 3, "	Berlin.
John White.....	63	"	"	"	Married.....	" 6, "	Concord.
Cyrus Twitchell.....	63	"	"	"	"	" 9, "	Wilton.
Fred L. Drown.....	52	"	F.	"	Widowed.....	" 10, "	Manchester.
Katherine O'Neil.....	64	"	"	"	Married.....	" 14, "	Lebanon.
Agnes A. Templeton.....	41	"	"	"	"	" 18, "	"
Mary E. Stevens.....	31	"	"	"	"	" 18, "	"
Ulric Marcott.....	47	M.	"	"	Single.....	" 18, "	"
John R. Manderville.....	32	"	"	"	"	" 18, "	"

27	F.	W.	Married	Maine.....	Dec.	1903	Concord.
Annie Hayward.....			Single.....	Germany.....	"	24,	"
Minnie Nofky.....	M.		Widowed.....	Canada.....	"	30,	Winchester.
Exra Howard.....			Married.....	New Hampshire.....	"	31,	Claremont.
John C. Howe.....	F.		Single.....	"	Jan.	7,	1904
Abbie J. Childs.....				"	"	7,	Lebanon.
Elizabeth M. Purnort.....				"	"	8,	Keene.
Jenness Brown.....	M.		Married.....	"	"	8,	Stewartstown.
Homor C. Forbes.....			Single.....	"	"	11,	Unity.
Leonard E. Breed.....	F.		Married.....	Canada.....	"	15,	Tilton.
Josephine Taylor.....			Single.....	Ireland.....	"	19,	Manchester.
Rose Foreman.....	M.			Sweden.....	"	22,	
John A. Erickson.....			Married.....	New Hampshire.....	"	25,	Belmont.
Charles N. Huntress.....			Single.....	"	"	26,	Dover.
Clara Jones.....	F.		Married.....	"	"	29,	Brookline.
Elmer J. Rideout.....			Widowed.....	Ireland.....	"	30,	Bethlehem.
John Harrigan.....			Single.....	Vermont.....	"	30,	Lisbon.
Ned V. Kay.....	"		"	New Hampshire.....	Feb.	2,	Dover.
Fred O. Coleman.....	F.		Married.....	"	"	2,	Milton.
Lydia Renick.....	"		Single.....	Canada.....	"	2,	Concord.
Elizabeth P. Dunkley.....				Norway.....	"	5,	Nashua.
Zenaid Drouin.....	M.		Married.....	Massachusetts.....	"	6,	Charlestown.
John Johnson.....			Single.....	New Hampshire.....	"	11,	Concord.
Lottie C. Smith.....	F.		Married.....	New Hampshire.....	"	12,	Runney.
Joseph W. Barnham.....			Widowed.....	Sweden.....	"	17,	Grassmere Co. Farm.
Ernest Barber.....	F.		Single.....	New Hampshire.....	"	18,	Nashua.
Poll Woolen.....			Married.....	Norway.....	"	19,	Alstead.
Frank A. Kiddier.....	M.			Norway.....	"	24,	Claremont.
Ivring A. Heath.....			"	Norway.....	"	25,	
Martha Strand.....	M.		"	New Hampshire.....	"	25,	New Boston.
Lendell Dodge.....	F.		"	South Carolina.....	"	25,	Nashua.
Ediza Moody.....			Widowed.....	New Hampshire.....	"	26,	Concord.
Frank R. Elliott.....	M.		Married.....	Massachusetts.....	"	26,	Bath.
Alicia M. Davis.....	F.		Single.....	New Hampshire.....	"	26,	Concord.
Harry W. Hoogdon.....	M.		Married.....	Ireland.....	March	27,	"
Patrick Hoolahan.....			Single.....	New Hampshire.....	"	6,	"
Charles H. Thorne.....			Widowed.....	Canada.....	"	7,	Candia.
Elmer R. Beane.....	F.		Married.....	New Hampshire.....	"	7,	Meredith.
Gertrude Rogers.....			"	"	"	9,	Twin Mountain.
Mary Ellmore.....	M.		Single.....	Canada.....	"	10,	Manchester.
Dennis Ganthier.....			Married.....	New Hampshire.....	"	11,	Concord.
Oscar Hall.....	F.		"	Scotland.....	"	11,	Nashua.
Nelle Downing.....			Single.....	"	"	11,	Marlborough.
Hugh McLachlan.....	M.		Married.....	"	"	12,	"

TABLE No. 2.—Continued.—COMMITMENTS.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.			
Forrest L. Bickford	44	M.	.....	W.	New Hampshire	March 12, 1904	Somersworth.
Perley McCoy	36	"	.....	"	" .....	" 13, "	Peterborough.
Warren E. Smith	31	"	.....	"	" .....	" 15, "	Meredith.
Mary A. Lane	54	"	F.	"	"	" 16, "	Hampton.
Alice S. Bartlett	50	"	"	"	"	" 17, "	Rochester.
Arabelle A. Winkley	44	"	"	"	New Hampshire	" 19, "	Dover.
Sarah E. Russell	75	"	"	"	"	" 28, "	Somersworth.
Fiebe Ann Mills	13	M.	.....	"	" .....	" 28, "	Pembroke.
Clarence Dowse	66	"	"	"	"	April 5, "	Lebanon.
Henry S. Wheeler	73	"	"	"	"	" 5, "	Derry.
Elizabeth Grant	83	"	"	"	England	" 6, "	Rochester.
Charlotte A. Gregg	53	"	F.	"	New Boston	" 7, "	Manchester.
Emma Tebbetts	51	"	"	"	Weare	" 8, "	Weare.
Julia A. Bixby	24	M.	.....	"	Vermont	" 11, "	Manchester.
Charles Burnham	66	"	"	"	New Hampshire	" 12, "	Derry.
Catherine O'Connor	31	M.	F.	"	Ireland	" 12, "	Newfields.
Eva Haley	64	"	"	"	New Hampshire	" 16, "	Nashua.
Gilman Johnson	40	"	"	"	"	" 18, "	Rye.
Susie P. Babcock	22	"	"	"	"	" 19, "	Millford.
Edna J. Hetsey	38	M.	"	"	"	" 19, "	East Andover.
Frank J. Caswell	54	"	"	"	Massachusetts	" 20, "	Concord.
William Spofford	70	"	"	"	Canada	" 22, "	Westmoreland.
Joseph Harper	29	"	F.	"	Ireland	" 22, "	Troy.
Ellen Sullivan	23	"	"	"	Sweden	" 23, "	Dover.
Olea Hillstrom	64	M.	"	"	New York	" 27, "	Exeter.
Guy Shaw	25	"	"	"	Massachusetts	" 28, "	Hillsborough.
Mary E. Young	47	"	"	"	England	" 28, "	Auburn.
Harry S. Flanders	50	"	"	"	Ireland	" 28, "	Dover.
Edward Ward							
James Lewis							

	30	F.	W.	Single.	New Hampshire	April	1904
Mary Poliquin.....	30	"	"	Married	Maine.....	30	Manchester.
Priscilla Lindsey.....	50	M.	"	"	Vermont.....	30	Merrimack.
Sidney E. Spofford.....	37	F.	"	"	Massachusetts.....	1	Woodsville.
Ella F. King.....	48	"	"	"	New Hampshire.....	2	Thornion's Ferry.
Alfred H. Truell.....	39	F.	"	"	Massachusetts.....	2	Grafton.
Ellen O. Davis.....	29	"	"	"	Massachusetts.....	2	Rye.
Patrick McAtavey.....	17	M.	"	Single.	Ireland.....	2	Dover.
John Foley.....	36	"	"	Widowed.	Massachusetts.....	2	Concord.
Eli A. Sawtelle.....	60	"	"	Single.	Massachusetts.....	4	Amherst.
G. Ben Kimball.....	38	"	"	Widowed.	New Hampshire.....	5	Grafton.
Mary J. Hastings.....	68	F.	"	Single.	"	7	Antrim.
Willie V. Elkins.....	22	M.	"	"	"	9	Concord.
David Bryden.....	34	"	"	Married	Rhode Island.....	9	"
George Megans.....	34	"	"	"	New Hampshire.....	9	Penacook.
William D. Knowles.....	60	"	"	"	Massachusetts.....	10	Chester.
Etta Garrick.....	43	F.	"	"	New Hampshire.....	10	Belmont.
Sarah E. Farmer.....	55	"	"	"	"	11	Nashua.
Elizabeth Woodward.....	45	"	"	"	"	11	Lyndeborough.
William P. Foster.....	90	M.	"	"	Ireland.....	11	Concord.
Mary McNamara.....	30	F.	"	Single	Pakota.....	13	Nashua.
Elmore Janelle.....	35	"	"	Widowed	Canada.....	14	Manchester.
Louis Basilion.....	65	M.	"	"	New Hampshire.....	14	"
Walter S. Reynolds.....	55	"	"	Single.	Canada.....	16	Berry.
Lillian Andrews.....	22	F.	"	"	New Hampshire.....	16	Laconia.
Carrie Steele.....	38	"	"	Married	Massachusetts.....	19	Chichester.
Charles E. Thayer.....	50	M.	"	"	Maine.....	22	Canaan.
Vasco Kennedy.....	72	"	"	"	New Hampshire.....	25	Springfield.
Edward Sullivan.....	34	"	"	Single.	"	June	Keene.
Sylvester Doyle.....	50	"	"	Married	Massachusetts.....	1	"
William N. Clegg.....	46	"	"	"	New Hampshire.....	1	"
James P. Berné.....	32	"	"	Single	England.....	1	"
George K. Smith.....	72	"	"	Married	New Hampshire.....	1	"
David Sawyer.....	74	"	"	Single	"	1	Concord.
Edward Fisk.....	74	"	"	"	Sweden.....	1	"
Peter Anderson.....	48	"	"	Widowed	England.....	1	"
James Clark.....	48	"	"	Single	New Hampshire.....	1	Concord.
George Carter.....	38	"	"	"	"	1	Boscawen.
William Solon.....	42	"	"	"	"	1	"
George W. Simonds.....	27	"	"	"	"	1	Penacook.
Edward Lambert.....	23	"	"	"	"	1	Concord.
Frank Castagne.....	26	"	"	"	"	1	Andover.
George Shepard.....	31	"	"	"	"	1	"
George W. Brown.....	68	"	"	"	France.....	1	"
Gaques Marthier.....	68	"	"	"	"	1	"

TABLE No. 2.—Continued.—COMMITMENTS.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.			
Edward Duckworth.....	72	M.	.....	W.	Ireland.....	June	1, 1904
Michael Dunphy.....	77	"	.....	"	New Hampshire.....	"	1, "
Andrew J. Kidder.....	70	M.	F.	"	Vermont.....	"	2, "
Ann M. Colby.....	42	M.	F.	"	New Hampshire.....	"	3, "
George Parker.....	24	"	"	"	England.....	"	3, "
Mary L. Huckins.....	27	"	"	"	New Hampshire.....	"	4, "
Grace M. Inglis.....	39	"	"	"	England.....	"	4, "
Ellen T. Jessiman.....	55	M.	.....	.....	New Hampshire.....	"	4, "
Phoebe C. Morgan.....	32	"	"	"	Massachusetts.....	"	7, "
Lawrence Cooney.....	47	"	F.	"	New Hampshire.....	"	9, "
Sarah Baker.....	37	"	"	"	Massachusetts.....	"	9, "
Hattie Bean.....	40	M.	.....	"	New Hampshire.....	"	9, "
Harriet L. Wallace.....	57	"	"	"	Massachusetts.....	"	9, "
Levi M. Shorey.....	51	M.	F.	"	New Hampshire.....	"	10, "
Laura A. Berry.....	33	M.	F.	"	"	"	11, "
George C. Humphreys.....	64	M.	F.	"	"	"	15, "
Hannah A. Hoyt.....	16	N.	"	"	"	"	17, "
Don Aldrich.....	21	"	"	"	"	"	18, "
Margaret M. Collins.....	23	M.	"	"	"	"	19, "
Emma R. Peabody.....	74	"	.....	"	United States.....	"	19, "
John C. Barpee.....	69	"	F.	"	Ireland.....	"	21, "
Emeline A. Richardson.....	50	M.	"	"	New Hampshire.....	"	23, "
Anthony Joyce.....	43	"	F.	"	Ireland.....	"	23, "
Annie E. Hill.....	30	M.	"	"	New Hampshire.....	"	23, "
Margaret Kerrigan.....	76	"	F.	"	Maine.....	"	23, "
Daniel Harmon.....	87	"	"	"	New Hampshire.....	"	27, "
Hannah M. Wood.....	26	M.	"	"	New Hampshire.....	"	28, "
Carroll E. Jenkins.....	76	"	F.	"	"	"	28, "
Martha Hart.....	51	N.	"	"	"	"	28, "
Charles M. Clyde.....							

	84	F.	W.	Widowed ..	Vermont ..	June	28, 1904	
Lavinia B. Stoddard ..	42	F.	"	Single ..	New Hampshire	"	"	Franconia.
Lucie Maynard ..	70	F.	"	Widowed ..	Canada	"	"	Hollis.
Ellie F. Johnson ..	48	"	"	Married ..	New Hampshire	"	"	Nashua.
Louisa Bourdon ..	20	M.	"	Single ..	"	July	1,	Milford.
Steven O. Powers ..	69	"	"	Widowed ..	Vermont	"	3,	Peterborough.
Edwin L. Berry ..	38	"	"	Single ..	New Hampshire	"	5,	Croydon.
Henry Jackson ..	30	"	"	"	"	"	6,	Portsmouth.
Matilda C. Cushing ..	64	F.	"	Widowed ..	Massachusetts.	"	7,	Columbia.
Richard N. Blodgett ..	51	F.	"	"	New Hampshire	"	7,	East Concord.
Eva S. French ..	26	"	"	Married ..	Virginia	"	8,	North Bosworth.
John Quigley ..	45	M.	"	"	Ireland	"	9,	Bristol.
Elizabeth Robinson ..	31	"	"	Married ..	Sweden	"	10,	Littleton.
Eleanor M. Johnson ..	41	"	"	"	Canada	"	11,	Pellam.
Celia Kelly ..	51	"	"	Single ..	New Hampshire	"	14,	Dover.
Charles F. Pope ..	79	M.	"	Married ..	Massachusetts.	"	15,	Greenland Village.
Nellie M. Gransby ..	20	F.	"	"	New Hampshire	"	18,	West Manchester.
Charles F. Marston ..	30	M.	"	Single ..	"	"	19,	Portsmouth.
William H. Marvell ..	51	F.	"	Married ..	"	"	21,	Troy.
Maud Kempton ..	23	"	"	"	"	"	21,	Concord.
Milton P. Sawyer ..	31	F.	"	Single ..	"	"	22,	Mt. Vernon.
Annie C. Kimball ..	44	"	"	Married ..	"	"	23,	Sumner.
Emma Livermoir ..	45	"	"	"	"	"	24,	Keene.
Charles H. Mathews ..	36	M.	"	"	Canada	"	25,	Lakeport.
Lizzie Guilleault ..	53	"	"	"	United States.	"	25,	Nashua.
Frank Mathews ..	18	"	"	Single ..	Canada	"	27,	Keene.
Lucy A. Hurd ..	73	F.	"	Widowed ..	Prince Edward Is.	"	27,	East Manchester.
Rose Lilly ..	50	"	"	Single ..	New Hampshire	"	28,	Concord.
Wilbur W. Dickey ..	38	M.	"	Married ..	New Hampshire	"	28,	Wilton.
Charlotte Harriman ..	48	F.	"	"	New Brunswick.	Aug.	1,	East Boston, Mass.
Martha M. Gibson ..	40	"	"	"	Vermont	"	3,	Manchester.
Mary A. Hendrix ..	37	"	"	"	Massachusetts.	"	3,	Conway.
William Hache ..	60	"	"	Single ..	Canada	"	3,	Haverhill.
Leonard Dodd ..	36	"	"	Married ..	England	"	3,	Keene.
Willie Dysart ..	31	"	"	Single ..	New Hampshire	"	5,	Dover.
Fred L. Quimby ..	34	"	"	"	"	"	5,	Nashua.
Charles Cheney ..	25	"	"	Widowed ..	Massachusetts.	"	5,	Grafton County Farm.
Marvin Mitchell ..	64	"	"	Married ..	Canada	"	5,	"
Felix Geofine ..	39	"	"	Single ..	Massachusetts.	"	5,	"
John Corrigan ..	32	"	"	Divorced ..	Ireland	"	9,	Berlin.
Josephine Bodwell ..	38	F.	"	Widowed ..	New Hampshire	"	12,	Danbury.
Maria Vanderford ..	71	"	"	"	"	"	17,	Amherst.

TABLE No. 2.—Continued.—COMMITMENTS.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, married, or widowed.		
Frank Walker.....	62	M	.....	B.	Married...	Aug.	Rockingham Co. Farm.
Harry Wilson.....	36	"	.....	W.	Widowed...	"	"
Daniel Philbrick.....	48	"	.....	"	Married...	"	"
David Philbrick.....	38	"	.....	"	Single...	"	"
John Annis.....	33	"	.....	"	"	"	"
Frank Sibley.....	54	"	.....	"	Married...	"	Newport.
Edith Rhimes.....	14	"	.....	"	Single...	"	Farmington.
Etta Smith.....	43	"	F.	"	Divorced...	"	Manchester.
Orzando Hoyt.....	52	M.	.....	"	Single...	"	Franeestown.
Mina B. Cobb.....	20	"	F.	"	"	"	Laconia.
Frank J. Bennett.....	51	M.	.....	"	Married...	"	Manchester.
Elizabeth A. Dearborn.....	41	"	F.	"	"	"	Exeter.
Peter White.....	45	M.	.....	"	"	Sept.	Littleton.
Robert Knox.....	36	"	.....	"	"	"	Exeter.
Mary Harlan.....	38	"	F.	"	Single...	"	Manchester.
James Pendergast.....	52	M.	.....	"	"	"	Dover.
Ella McCabe.....	38	"	F.	"	"	"	Manchester.
Peter Forest.....	36	M.	.....	"	"	"	Rochester.
Ellen Gibbs.....	43	"	F.	"	Divorced...	"	Exeter.
Jennie E. Spalding.....	39	"	"	"	Single...	"	East Concord.
Elizabeth Furmort.....	46	"	"	"	"	"	Lebanon.
Michael Fagan.....	26	M.	.....	"	"	"	Concord.
Samuel F. Jenkins.....	56	"	.....	"	Married...	"	Pittsfield.
James McCarrey.....	39	"	.....	"	Single...	"	Lancaster.
Johanna Burns.....	35	"	F.	"	"	"	Claremont.
Elmer R. Beane.....	38	M.	.....	"	Widowed...	"	Candia.
Aleide Berube.....	43	"	"	"	Married...	"	Somersworth.
Bridget Loneragan.....	24	"	F.	"	Single...	"	Portsmouth.
Celia Kelley.....	62	"	.....	"	Widowed...	"	Coos County Farm.

		F.	W.	Single.	Canada New Hampshire United States New Hampshire England United States Vermont United States Ireland United States Ireland Sweden Poland Canada New Hampshire " " " "	Sept.	19, 1904	Cot's County Farm.
Jennie Forbes.....	32	.....	.....	Single.....	Canada	19, "	19, "	"
Susie Estes.....	43	"	"	"	New Hampshire	19, "	19, "	"
Ella Rhoades.....	51	"	"	"	United States	19, "	19, "	"
Edward Ingerson.....	36	M	"	"	New Hampshire	19, "	19, "	"
Albert Adams.....	55	"	"	"	England	19, "	19, "	"
David J. Day.....	36	"	"	"	United States	19, "	19, "	"
Irving Noyes.....	44	"	"	Divorced..	"	19, "	19, "	"
Edward Elliott.....	44	"	"	Single.....	Vermont	19, "	19, "	"
Henry Rich.....	71	"	"	Married..	United States	19, "	19, "	"
Frank Cone.....	70	"	"	Single.....	"	19, "	19, "	"
William W. Eastman.....	69	"	"	Married..	"	19, "	19, "	"
Lizzie K. Bass.....	68	"	"	Widowed..	"	20, "	20, "	Iceland.
Mattie E. Hardy.....	44	F	"	Single.....	"	21, "	21, "	Hudson.
Mary Daymouth.....	54	"	"	Married..	"	21, "	21, "	Manchester.
Kate Mullen.....	23	"	"	Single.....	Ireland	21, "	21, "	"
Emma B. Bills.....	23	"	"	"	United States	21, "	21, "	Millford.
Jane Morrill.....	60	"	"	"	"	21, "	21, "	Manchester.
Ellen Horan.....	39	"	"	"	Ireland	22, "	22, "	Hillsboro' Co. Farm.
Carl Nelson.....	33	M	"	"	Sweden	22, "	22, "	"
Stanhus Vicks Kelsy.....	24	"	"	"	Poland	22, "	22, "	"
Alfred Raza.....	23	"	"	"	Canada	22, "	22, "	"
Martha D. Hayes.....	77	"	"	"	New Hampshire	22, "	22, "	Rochester.
Ira J. Hutchinson.....	65	F	"	Married..	"	23, "	23, "	Concord.
Emma I. Wiggins.....	54	F	"	Widowed..	"	25, "	25, "	Stratham.
Arthur W. Meserve.....	34	M	"	Single.....	"	28, "	28, "	New Hampshire.

Persons committed to the Rockingham County Almshouse during the year ending September 30, 1904.

		F.	W.	Single.	Widowed.	Single.	American.	Oct.	17, 1903	Portsmouth.
Margaret Scott.....	40	M	"	Single.....	"	"	American	Nov.	28, "	Derry.
Harry Wilson.....	35	"	"	Widowed..	"	"	French.	Dec.	4, "	Newmarket.
Michael Gagne.....	25	"	"	Single.....	"	"	American	Jan.	16, 1904	Portsmouth.
Alfred Walsh.....	57	"	"	"	"	"	"	Feb.	27, "	Derry.
Charles Burnham.....	24	"	"	Married..	"	"	"	Mar.	10, "	Exeter.
Frank Drew.....	55	"	"	Single.....	"	"	"	June	31, "	Portsmouth.
Lulu Hanson.....	27	F	"	Widowed..	"	"	Nova Scotia			
Thomas Jameson.....	70	M	"	Single.....	"	"	American			Raymond.
Hattie Bean.....	36	F	"	"	"	"	"			Longdonderry.
Charles Alken.....	25	M	"	"	"	"	"			

Persons committed to the Merrimack County Almshouse during the year ending September 30, 1904.

Edward Fisk.....	59	M.	.....	W.	Widowed .. Single.....	American.....	Jan. " 22, " 1, 1904
Charles Tenney.....	74	"	.....	"	.....	.....	"

Persons committed to the Hillsborough County Almshouse during the year ending September 30, 1904.

Anthony Pare.....	80	M.	.....	W.	Married.....	French.....	Nov. Feb. 4, 1903 13, 1901	Manchester. Nashua.
Poll Woolen.....	30	"	.....	"	Single.....	Pole.....	13, "	"
Ernest Barber.....	23	"	F.	"	Divorced ..	American.....	June 20, "	Antrim.
Annie E. Hill.....	44	"	.....	"	Married ..	Irish.....	20, "	Manchester.
Margaret Calligan.....	36	"	.....	"	Widowed ..	French.....	21, "	Nashua.
Lucie Maynard.....	70	"	.....	"	Married ..	.....	25, "	Manchester.
Lizzie Guilbeault.....	51	"	.....	"	Divorced ..	Russian.....	Aug. 22, "	"
Etta Smith.....	41	"	.....	"	Single ..	Irish.....	24, "	Millford.
Mary Harlan.....	30	"	.....	"	"	American.....	6, "	Manchester.
Emma B. Bills.....	23	"	.....	"	Married ..	Irish.....	" 6, "	"
Kate Mullen.....	23	"	.....	"	Single ..	Pole.....	" 6, "	Nashua.
Mary Daymouth.....	54	"	.....	"	.....	French.....	" 6, "	Manchester.
Stanlius Vicks Kelsy.....	24	M.	.....	"	.....	.....	" 6, "	Nashua.
Alfred Raza.....	23	"	.....	"	.....	.....	" 6, "	Manchester.

Persons committed to the Cheshire County Almshouse during the year ending September 30, 1904.

Margaret Corbett.....	34	"	F.	W.	Single.....	Irish.....	July Sept. 31, 1903	Keene.
Joseph L. Whipple.....	60	M.	.....	"	"	American.....	17, "	Fitzwilliam.
David Harty.....	62	"	.....	"	.....	Irish.....	May 10, 1904	Walpole.

Persons committed to the Sullivan County Almshouse during the year ending September 30, 1904.

Bell Rickard.....	40	"	F.	W.	Widowed ..	American.....	April 30, 1904	Newport.
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TABLE No. 2.—Continued.—COMMITMENTS.

Persons committed to the Grafton County Almshouse during the year ending September 30, 1904.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of commitment.	Where from.
	Years.	Male.	Female.	Single, married, or widowed.			

No commitments during the year.

Persons committed to the Coös County Almshouse during the year ending September 30, 1904.

Albert Adams	65	M.	W.	Single.....	American.....	May 17, 1904	Pittsburg.
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DISCHARGES.

TABLE No 3.—DISCHARGES.

Persons discharged from the New Hampshire State Hospital during the year ending September 30, 1903.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of discharge.	How long at institution.			Condition when discharged.
	Years.	Male.	Female.	Color.			Years.	Months.	Days.	
Joseph Vachon.....	30	M.	.....	W.	Canada.....	Oct.	4	11	4	Not improved.
Clara Bell White.....	26	.....	.....	.....	New Hampshire.	"	7	20	.....	"
Edna F. Woodman.....	26	.....	F.	.....	"	6	2	1	14	"
Emma E. Wills.....	50	.....	.....	.....	Massachusetts.	18,	.....	2	27	Recurrent recovery.
Stella Forsath.....	15	.....	.....	.....	New Hampshire.	"	.....	6	.....	Improved.
Elmer J. Rideout.....	41	M.	.....	.....	"	23,	.....	1	12	Recurrent recovery.
Christina Russell.....	41	.....	F.	.....	Nova Scotia.....	"	.....	3	8	Much improved.
Margaret Edmunds.....	56	.....	.....	.....	Ireland.....	30,	.....	1	1	"
Alice L. Nash.....	41	.....	.....	.....	Vermont.....	"	.....	1	19	Recovered.
John J. McCarthy.....	19	M.	.....	.....	New Hampshire.	Nov.	1	2	20	Unimproved.
Ida T. Johnson.....	39	.....	F.	.....	"	6,	1	8	.....	Recovered.
Charles C. Eastman.....	37	M.	.....	.....	New Hampshire.	"	.....	.....	22	Not insane.
Teresa Moran.....	60	.....	F.	.....	England.....	15,	.....	1	27	Improved.
Mary Morano.....	39	.....	.....	.....	Italy.....	18,	.....	.....	6	Not insane.
Gideon Lemay.....	36	M.	.....	.....	Canada.....	"	.....	2	18	Improved.
Frank LeSarge.....	33	.....	.....	.....	Maine.....	22,	.....	.....	17	Recovered from alcoholism.
Walter S. Cotton.....	27	.....	.....	.....	Massachusetts.	"	.....	.....	18	Recovered from alcoholism.
Esther E. Emerson.....	63	.....	F.	.....	New Hampshire.	29,	2	6	8	Improved.
George Donohoe.....	27	M.	.....	.....	Massachusetts.	Dec.	2	2	12	Recovered.
Thomas F. Heolihan.....	33	.....	.....	.....	New Hampshire.	10,	.....	.....	11	Not improved.
Bertha Wells.....	32	.....	F.	.....	Wisconsin.....	"	.....	.....	1	"
John W. Malloy.....	35	M.	.....	.....	New Hampshire.	12,	.....	1	4	Recovered.
Josephine Trudeau.....	.....	.....	.....	.....	"	13,	.....	.....	.....	"
Catherine Hearn.....	37	.....	F.	.....	New Hampshire.	21,	.....	1	17	"
Delina Provost.....	52	.....	.....	.....	Canada.....	24,	3	11	20	Not improved.
Daniel J. Sawyer.....	52	M.	.....	.....	New Hampshire.	29,	.....	8	12	Much improved.
Ellen Smith.....	65	.....	F.	.....	New York.....	31,	2	2	12	Recovered.
						Jan. 1, 1903	.....	.....	22	Improved.

		F.	W.	Single.	New Hampshire, Jan.	2, 1903	5	9	Much Improved, Recovered.
Bernice Kenyon.....	18			Single.....	New Hampshire, Jan.	2, 1903	5	9	Much Improved, Recovered.
Nellie M. Newcomb....	40			Married.....	Maine.....	3, "	1	28	
Hiram Mace.....	62	M.		Widowed.....	"	6, "	2	7	
Augustus Jackson.....	25			Single.....	Canada.....	6, "	4	2	Improved, Recovered.
Maud Trudo.....	24	M.		Single.....	Vermont.....	17, "	4	26	
James H. Wilson.....	38	F.		Single.....	Maine.....	23, "	1	25	
Carroll D. Johnson.....	24			Widowed.....	New Hampshire	29, "	1	14	
Amos C. Nute.....	20			Single.....	Massachusetts.....	30, "	2	28	
Bernice Sanborn.....	15	M.		Single.....	New Hampshire	31, "	2	5	
Arthur H. Parker.....	30			Married.....	New Hampshire	7, "	3	14	
John W. Howe.....	18	F.		Single.....	Canada.....	10, "	5	4	Much Improved, Recovered.*
Emma Cuddehly.....	56	M.		Married.....	New Hampshire	18, "	3	9	Improved, Recovered.
Enoch J. Marston.....	20	F.		Single.....	Canada.....	21, "	8	11	
Mary Dusiene.....	65			Married.....	East Tilton.....	23, "	1	19	
Mary Gray.....	32			Widowed.....	New Brunswick.....	24, "	1	10	Not improved.
Mary Morrison.....	46			Single.....	Ireland.....	25, "	1	3	
James Clark.....	84			Single.....	Ireland.....	25, "	1	3	
John McGinnis.....	42			"	New Hampshire	25, "	1	3	
William Solon.....	24			"	"	25, "	1	3	
George Shepard.....	40			"	"	25, "	1	3	
George W. Symonds.....	30			"	"	25, "	1	3	
Fred R. Robinson.....	61			"	France.....	25, "	1	3	
Jacques Marthier.....	33			"	New Hampshire	25, "	1	3	
George Robinson.....	56			Married.....	"	25, "	1	3	
E. P. Blood.....	51			Single.....	"	25, "	7	28	
William Coleman.....	27			"	"	25, "	4	25	
Edward Lambert.....	21			"	"	25, "	1	3	
Frank Castagne.....	20			"	"	25, "	1	3	
George W. Brown.....	46			"	Sweden.....	25, "	1	3	
Peter Anderson.....	38			"	New Hampshire	25, "	1	3	
Cora Moody.....	48	F.		Married.....	"	25, "	1	3	
Hattie Ladd.....	66			Widowed.....	New York.....	25, "	1	3	
Roxie Archibald.....	54			Single.....	Maine.....	25, "	1	3	
Jane Leavitt.....	27			"	New Hampshire.	25, "	1	3	
Ida Edmunds.....	39			"	Massachusetts.....	25, "	1	3	
Eliza A. Parkinson.....	46			Married.....	Nova Scotia.....	25, "	1	3	
Jane Colbath.....	63			Single.....	New Hampshire	25, "	1	3	
Mary Drake.....	50			Widowed.....	Ireland.....	25, "	1	3	
Mary Heath.....	49			Single.....	"	25, "	1	3	
Jane Patterson.....	51			"	England.....	25, "	1	3	
Bridget Tierney.....	59			Married.....	Sweden.....	25, "	1	3	
Julia Tournay.....	40			Widowed.....	Ireland.....	25, "	1	3	
Ida Anderson.....	61			"	"	25, "	1	3	
Julia Crowley.....				"	"	25, "	1	3	

* Returned to Merrimack County Almshouse after completion of new building.

TABLE No. 3.—Continued.—DISCHARGES.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of discharge.	How long at institution.			Condition when discharged.
	Years.	Male.	Female.	Color.			Years.	Months.	Days.	
Mary Quimby.....	38	.....	F.	W	New Hampshire	Feb. 25, 1903	1	3	10	Not improved.
Annie Farnham.....	32	.....	"	"	"	" 25, "	1	3	10	"
Mary Hanagan.....	63	.....	"	"	Ireland.....	" 25, "	1	3	10	"
Matilda McCarthy.....	76	.....	"	"	New Hampshire	" 25, "	1	3	10	"
Sarah Chamberlin.....	58	.....	"	"	"	" 25, "	1	3	10	"
Emma J. Hill.....	55	.....	"	"	"	" 25, "	1	3	10	"
Salome Little.....	42	.....	"	"	"	" 25, "	1	3	10	"
Emma Brown.....	49	.....	"	"	Andover.....	" 25, "	1	3	10	"
Susan Pickard.....	41	.....	"	"	New Hampshire	" 25, "	1	3	10	"
Emma Putnam.....	44	.....	"	"	"	" 25, "	1	3	10	"
Katherine Voudrey.....	50	.....	"	"	Massachusetts	March 2, "	1	3	10	"
Arthur L. Cahill.....	24	M.	"	"	Canada	" 3, "	.....	3	23	Recurrent recovery.
Mary Pinkham.....	22	.....	F.	"	Maine	" 6, "	.....	13	17	Recovered from alcoholism.
Sarah M. Goodhue.....	51	.....	"	"	New Hampshire	" 7, "	2	2	28	Improved.
Etta M. Goodwin.....	34	.....	"	"	"	" 9, "	.....	1	24	Not improved.
Michael Fournier.....	62	M.	"	"	Canada	" 9, "	.....	7	9	Recovered.
John Ravina.....	20	.....	"	"	Finland	" 10, "	.....	4	7	"
R. Myria Gilbert.....	30	M.	"	"	New Hampshire	" 13, "	.....	8	10	Improved.
Arthur Huntoon.....	36	.....	"	"	"	" 24, "	.....	3	7	Much improved.
Walter S. Johnson.....	25	.....	"	"	"	" 26, "	.....	7	14	Not improved.
Leslie Hubbard.....	23	.....	"	"	"	" 26, "	.....	2	11	Improved.
Forest J. Bickford.....	43	.....	"	"	"	April 1, "	.....	3	12	"
Arthur F. Denuett.....	36	.....	F.	"	"	" 5, "	.....	10	17	Not improved.
Agnes Dowling.....	39	M.	"	"	Vermont.....	" 8, "	.....	3	18	Recurrent recovery.
Frank J. Caswell.....	20	.....	"	"	Maine	" 10, "	.....	10	17	Recovered.
Henry W. Bombard.....	33	.....	"	"	Ireland	" 11, "	.....	11	10	"
John W. Gibbs.....	72	"	"	New Hampshire	" 11, "	2	8	"
Mary Moriarty.....	30	F.	"	"	"	"
Caroline E. Whittle.....	42	"	"	"	"	"

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Carrie Collins.....	31	F.	W.	Married..	New York.....	April 11, 1903	6	16	Much improved.
George Kushlow.....	71	M.	"	"	Vermont.....	" 14, "	8	7	"
Josephine Regis.....	35	F.	"	"	New Hampshire	" 19, "	8	28	Unimproved.
J. Frank Hoyt.....	76	M.	"	"	"	" 21, "	...	22	Recovered.
George E. Wiggins.....	57	F.	"	Widowed	"	" 15, "	...	3	Unimproved.
Evelyn J. Foster.....	26	"	"	Single...	Ireland.....	" 23, "	...	8	Recovered.
Annie Howe.....	54	"	"	Married..	Sweden.....	" 23, "	...	10	Improved.
Selma Cole.....	35	"	"	Single...	New Hampshire	" 25, "	...	5	Recovered.
Nat W. Pillsbury.....	23	M.	"	Married..	Canada.....	" 25, "	...	13	Not improved.
George E. Hill.....	47	"	"	"	New Hampshire	May	7	25	"
Arthur Ballou.....	40	"	"	"	Ireland.....	" 1, "	5	18	"
Mary McNamara.....	29	F.	"	"	New Hampshire	" 2, "	11	14	Much improved.
Charles X. Cutter.....	52	"	"	"	"	" 5, "	4	19	Recovered.
Fred S. Hayes.....	46	"	"	"	"	" 8, "	...	16	Eloped.
Walter I. Abbott.....	27	"	"	Single...	Massachusetts..	" 10, "	...	27	Improved.
Ada G. Nute.....	23	F.	"	"	Maine.....	" 11, "	7	12	Recovered.
Julia E. Sargent.....	44	"	"	Married..	New Hampshire	" 12, "	...	25	Eloped. Improved.
Priscilla H. Lindsey.....	57	M.	"	Single...	"	" 23, "	8	8	Improved.
John Sheehan.....	43	F.	"	"	"	" 30, "	10	14	Escaped.
Alma G. Underhill.....	20	M.	"	"	"	June	1	9	Not insane.
Chester C. Meade.....	40	"	"	Widowed	"	" 1, "	...	19	Improved.
George E. Wiggins.....	57	F.	"	Married..	"	" 1, "	3	19	Recovered.
Martha Jackson.....	46	M.	"	"	"	" 2, "	...	1	Recovered. [alcoholism.
George A. Roles.....	49	F.	"	Married..	"	" 8, "	1	12	Recovered from acute
Eva A. Thompson.....	37	M.	"	Widowed	"	" 8, "	5	21	Much improved.
George F. Moore.....	61	F.	"	Divorced.	"	" 17, "	1	12	Not improved.
May C. Stillings.....	63	"	"	Single...	"	" 19, "	5	24	Recovered.
Mary L. Hucksins.....	23	M.	"	"	Ireland.....	" 30, "	1	27	Not improved.
Michael McCarty.....	19	"	"	Single...	New Hampshire	" 30, "	5	6	Much improved.
James H. Dowlin.....	76	"	"	Widowed	"	July	1	15	Trans. to County Farm.
Homer D. Trask.....	33	"	"	Single...	"	" 1, "	8	...	"
George Carter.....	36	"	"	"	"	" 1, "	1	15	"
Edward Duckworth.....	...	"	"	Married..	New Hampshire	" 1, "	7	15	"
Eliza A. Wells.....	53	F.	"	Single...	"	" 1, "	1	15	Improved.
Hattie Ordway.....	45	"	"	"	Michigan.....	" 1, "	1	2	"
Ann J. Muzzey.....	55	"	"	Married..	New Hampshire	" 3, "	4	2	"
Katherine O'Conner.....	64	M.	"	Single...	Ireland.....	" 4, "	1	17	Much improved.
Walter S. Johnson.....	25	"	"	"	New Hampshire	" 6, "	6	25	Much improved.
Catherine A. Harris.....	42	F.	"	"	"	" 8, "	7	...	Recovered.
Charles H. Learned.....	50	M.	"	"	"	" 11, "	8	10	Not improved.
Sarah Rand.....	18	"	"	Married..	"	" 15, "	7	...	Much improved.
Mary F. Marsh.....	59	F.	"	Divorced.	"	" 16, "	...	6	Recovered.
Edith F. Ricker.....	36	"	"	Widowed	Maine.....	" 21, "	4	...	"
Willis J. Alexander.....	37	M.	"	"	New Hampshire	" 21, "	...	...	"

* Returned to Merrimack County Almshouse after completion of new building.

TABLE No. 3.—Continued.—DISCHARGES.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of discharge.	How long at institution.			Condition when discharged.
	Years.	Male.	Female.	Color.			Years.	Months.	Days.	
Hannah Chase	83	M.	F.	W.	England	July 25, 1903	.....	.....	18	Not improved.
Amos C. Dickerman	57	M.	F.	"	New Hampshire.	" 25, "	.....	5	9	Recovered.
Mabel Nash	22	"	F.	"	Connecticut	" 27, "	.....	5	9	Not improved.
Jessie F. Kenney	40	M.	"	"	New Hampshire.	Aug. 4, "	.....	3	4	Much improved.
Wilnot P. Tuson	22	M.	"	"	"	" 4, "	.....	3	4	Not improved.
Evelyn J. Foster	26	"	F.	"	"	" 10, "	.....	3	1	Recovered.
Lilla Cutter	43	"	"	"	New Hampshire.	" 11, "	.....	29	29	"
Emil Johnson	"	M.	"	"	Sweden	" 15, "	.....	7	24	"
Celia Kelley	"	"	F.	"	Canada	" 16, "	.....	1	12	"
Frida Schwatzer	21	"	"	"	New Hampshire.	" 16, "	.....	4	27	"
Lucy J. Sherman	66	"	"	"	Vermont	" 18, "	.....	10	18	Not improved.
Annie A. Gibbons	19	"	"	"	Ireland	" 19, "	.....	6	12	Recovered.
Martha Hazelton	58	"	"	"	New Hampshire.	" 21, "	.....	1	22	"
Eugene Mulligan	25	M.	"	"	"	" 27, "	.....	2	5	Improved.
Edwin B. Morse	71	"	"	"	New Hampshire.	" 28, "	.....	5	6	"
Charles H. Wentworth	24	"	"	"	"	" 29, "	.....	11	8	Not improved.
Wesley C. Foster	46	"	F.	"	"	Sept. 1, "	.....	2	28	Much improved.
Alice M. Haselton	38	"	"	"	"	" 3, "	.....	2	26	Improved.
Joseph I. Whipple	69	M.	F.	"	Massachusetts.	" 14, "	.....	4	1	Recovered.
Louise M. T. Perkins	50	"	"	"	New Hampshire.	" 16, "	.....	1	8	"
Mary C. Spinney	46	"	"	"	"	" 30, "	.....	1	8	"
Henry Hector	35	M.	"	B.	American	Oct. 14, 1902	.....	.....	14	Idle-minded.
James Johnson	17	"	"	W.	"	Feb. 28, 1903	3	.....	.....	Taken to Home for Fee-

Persons discharged from the Rockingham County Asylum during the year ending September 30, 1903.

Hartwell Ellis.....	55	M.	.....	W.	Single.....	American.....	May	12, 1903	.....	9	.....	Transferred to St. Hosp.
Eben K. Emerson	62	"	.....	"	Widowed ..	"	Sept.	17, "	.....	1	.....	"
Ira O. Colby	79	"	.....	"	Married ..	"	"	24, "	.....	1	9	"
William Garland	47	"	.....	"	"	"	"	24, "	.....	1	.....	"
Thomas Hubley	45	"	.....	"	"	Nova Scotia ..	"	24, "	.....	7	.....	"
Thomas Richardson	84	"	.....	"	Single.....	American.....	"	24, "	.....	3	.....	"
Louis Elsmore	50	"	.....	"	"	German.....	"	24, "	.....	8	.....	"

Persons discharged from the Strafford County Almshouse during the year ending September 30, 1903.

Orrin Kimball.....	M.	W.	Single.....	American.....	April	10, 1903	7	Transferred to St. Hosp.
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Persons discharged from the Belknap County Farm during the year ending September 30, 1903.

Margaret O'Brien	38	F.	W.	Single.....	Ireland	June	30, 1903	21	Transferred to St. Hosp.
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Persons discharged from the Carroll County Almshouse during the year ending September 30, 1903.

Amos C. Nate	51	M.	W.	Married ..	American.....	Jan.	2, 1903	21	Transferred to St. Hosp.
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Persons discharged from the Hillsborough County Asylum during the year ending September 30, 1903.

Josephine Trudeau.....	38	.....	F.	W.	Widowed ..	French	Nov.	5, 1902	.....	.....	3	Transferred to St. Hosp.
Mary Drossers	19	.....	.....	"	Single.....	"	.....	12, "	.....	.....	14	"
Lewis Champaigne.....	48	M.	.....	"	Married ..	"	Jan.	27, 1903	.....	1	16	"
George Banks	49	"	.....	C.	Single.....	Negro.....	.....	27, "	.....	7	.....	"
Annie Agnes Gibbons	18	.....	F.	W.	"	Irish.....	Feb.	6, "	.....	.....	2	"
Mabel Nash	22	.....	.....	"	"	"	.....	17, "	.....	.....	13	Improved.
Margaret Edmunds	50	.....	.....	"	Married ..	"	April	1, "	.....	.....	15	Transferred to St. Hosp.
Rose Belanger	19	.....	.....	"	Single.....	French .....	.....	2, "	.....	.....	9	"

TABLE No. 3.—Continued.—DISCHARGES.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of discharge.	How long at institution.			Condition when discharged.
	Years.	Male.	Female.	Color.			Single, married, or widowed.	Years.	Months.		Days.
Persons discharged from the Cheshire County Almshouse during the year ending September 30, 1903.										
Selina Churvis.....	54	.....	F.	W.	Married..	May 23, 1903	.....	.....	2	Transferred to St. Hosp.
Annette Lawson.....	59	.....	"	"	Widowed..	June 15, "	.....	.....	7	"
Louise E. King.....	39	.....	"	"	Single..	July 3, "	.....	.....	4	"
Margaret Kerrigan.....	35	.....	"	"	Married..	" 3, "	.....	.....	1	"
Filena Boisvert.....	32	.....	"	"	Widowed..	" 30, "	.....	.....	7	Improved.
Ann Murry.....	78	.....	"	"	Irish.....	Aug. 26, "	.....	.....	13	"
Persons discharged from the Cheshire County Almshouse during the year ending September 30, 1903.										
Ciperono Angrono.....	52	M.	.....	W.	Married..	Sept. 27, 1902	.....	.....	10	
Persons discharged from the Sullivan County Almshouse during the year ending September 30, 1903.										
Isabelle Smith.....	43	.....	F.	W.	Widowed..	Jan. 13, 1903	.....	.....	1	Transferred to St. Hosp.
W. J. Alexander.....	36	M.	.....	"	"	Mar. 17, "	.....	.....	21	"
Nora Wright.....	27	.....	F.	"	Irish.....	Apr. 29, "	.....	.....	3	"
Persons discharged from the Grafton County Almshouse during the year ending September 30, 1903.										
None discharged.										
Persons discharged from the Coös County Almshouse during the year ending September 30, 1903.										
Almedia Perkins.....	20	.....	F.	W.	Married..	June 10, 1903.	.....	.....	.....	Recovered.
Russell Noyes.....	29	M.	.....	"	Single..	July 13, "	.....	.....	13	Insane.
Mary Jolin.....	38	.....	F.	"	Married..	July 25, "	.....	.....	3	Insane, taken to Canada.

TABLE No. 4.—DISCHARGES.

Persons discharged from the New Hampshire State Hospital during the year ending September 30, 1904.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of discharge.	How long at institution.			Condition when discharged.
	Years.	Male.	Female.	Color.			Years.	Months.	Days.	
Frank A. Besett	25	M.		W.	Married..	Oct.	9	4	26	Much improved. Recovered.
J. H. Sullivan	34	"		"	Single..	"	1	1	16	"
Sarah Nims	64	M.	F.	"	Widowed	"				"
Fred L. Wilder	29	M.	F.	"	Married..	"				Not improved.
Mary Frost	53	"		"	Single....	"				Recovered.
Edward F. Welch	28	M.		"	Married..	"				Recurrent recovery.
Frank J. Caswell	38	"		"	Single....	"	3	27	8	Much improved.
Jonathan P. Kittredge	62	"		"	Married..	"	4	18	13	Recovered.
Parker P. Patch	52	"		"	Single....	"	2	4	18	Much improved.
Albert H. Nelson	62	"		"	Married..	"	2	4	18	Recovered.
Carrie S. Putney	45	"	F.	"	Single....	"	4	24	13	Recovered, alcoholism.
Emma F. Brown	48	"	"	"	Divorced	"	1	15	24	Much improved.
Mariam McArthur	33	"	"	"	Single....	"	8	12	16	Recovered.
George H. Norwood	52	M.		"	Married..	Nov.	2	2	16	Much improved.
Ellen F. Elliot	53	"	F.	"	"	"	4	7	6	Not improved.
Michael Burke	30	M.	F.	"	"	"	4	7	7	Recovered.
Kate O'Neil	20	"	F.	"	Single....	"	4	19	11	Improved.
Mary Maher	44	"	"	"	Married..	"	1	11	13	"
Margaret Kerrigan	35	"	"	"	"	"	4	1	29	Recovered.
Hugh Clifford	44	M.		"	Single....	"	1	8	16	Not improved.
Francis H. Weed	60	"		"	Widowed	"				Recovered.
Pierre Leveque	16	"		"	Single....	"	4	6	22	Much improved.
Joseph P. Weeks	68	"	F.	"	Married..	Dec.	2	9	11	Improved.
Ananda L. Crombie	53	"		"	Widowed	"	2	11	18	Not improved.
Mary Stewart	64	M.		"	Married..	"	6	3	3	Improved.
Reuben R. Flanders	56	"		"	"	"				
Melissa A. Hazelton	59	"	F.	"	"	"				

[illegible]

TABLE No. 4.—Continued.—DISCHARGES.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of discharge.	How long at institution.			Condition when discharged.
	Years.	Male.	Female.	Color.			Years.	Months.	Days.	
Forest L. Bickford.....	44	M.	.....	W.	New Hampshire	July	.....	4	11	Improved.
Louis Bassailon.....	65	"	.....	"	Canada.....	"	.....	2	11	Much improved.
Ella F. King.....	48	"	F.	"	Massachusetts..	"	.....	9	25	Improved.
Walter B. Fannigan....	40	M.	.....	"	New Hampshire	"	.....	2	25	Not improved.
Maud Kempton.....	23	"	F.	"	"	"	.....	2	8	"
John Foley.....	36	M.	.....	"	Massachusetts..	"	.....	2	29	"
Rose Lilly.....	50	"	F.	"	"	"	.....	.....	2	"
Charles H. Mathews....	36	M.	.....	"	United States..	"	.....	.....	8	Not insane.
Edwin A. Jones.....	65	"	.....	"	New Hampshire	Aug.	10	1	.....	Much improved.
George C. Humphreys..	33	"	.....	"	"	"	.....	6	21	Recurrent recovery.
Clara E. Jones.....	30	"	F.	"	"	"	.....	3	2	Improved.
G. Ben Kimball.....	38	M.	.....	"	"	"	.....	2	22	Recovered.
Lillian Andrews.....	22	"	F.	"	Canada.....	"	.....	1	7	Improved.
Annie Harrington.....	51	"	"	"	New Hampshire	"	1	8	18	Recovered.
Abbea Vachon.....	26	"	"	"	Canada.....	"	.....	10	29	Recurrent recovery.
Daniel O. Smart.....	28	M.	.....	"	New Hampshire	"	.....	1	20	Not improved.
Eveline Gagnon.....	29	"	.....	"	"	"	.....	5	10	Recovered.
Warren E. Smith.....	31	"	.....	"	"	"	.....	7	16	Eloped.
Leonard E. Breed.....	45	"	.....	"	"	"	.....	1	8	Recovered.
William H. Marvell....	51	"	.....	"	"	"	.....	8	19	Not improved.
Agnes A. Templeton....	41	"	F.	"	Ireland.....	"	.....	10	.....	Recovered.
Martha J. Foy.....	40	"	"	"	New Hampshire	Sept.	.....	4	19	Much improved.
Susie P. Babcock.....	40	"	"	"	Ireland.....	"	.....	2	17	Recovered.
Anthony Joyce.....	50	M.	.....	"	New Hampshire	"	.....	6	14	"
Leudell Dodge.....	65	"	.....	"	"	"	.....	2	23	"
Margaret Collins.....	21	"	F.	"	"	"	.....	4	25	"
Eva Haley.....	31	"	"	"	"	"	.....	1	14	"
Melissa Wyatt.....	53	"	"	"	"	"	1	2	.....	"
Emeline A. Richardson..	69	"	"	"	United States...	"	.....	.....	.....	"

	M.	W.	Married.	Scotland.....	Sept.	15, 1904	1	6	19	Not improved.	Eloped.
William Nimmo.....	56	"	"	Canada.....	"	15, "	1	8	21	"	"
Peter LeMar.....	62	"	"	Vermont.....	"	15, "	2	2	28	"	"
Henry Babcock.....	77	"	"	New Hampshire	"	17, "	6	6	6	Improved.	
Perley McCoy.....	36	"	Single.	New Hampshire	"	19, "	6	6	23	"	
Eliza Moody.....	35	F.	Married.	Massachusetts..	"	22, "	1	1	1	Recovered.	
Harry S. Flanders...	25	M.	Single.	New Hampshire	"	22, "	2	8	6	"	
Edwin G. Piper.....	52	"	Married.	Ireland.....	"	22, "	1	1	12	"	
Josephine Bodwell...	38	F.	Divorced.	New Hampshire	"	24, "	2	2	27	Much improved.	
Fred C. Blood.....	42	M.	Single.	New York.....	"	27, "	5	5	10	Recovered.	
Mary R. Young.....	64	F.	Married.	New Hampshire	"	28, "	1	3	29	Eloped.	
Edna J. Hersey.....	22	"	Single	Vermont.....	"	30, "	1	6	15	Recurrent recovery.	
Fred Pinco.....	29	M.	Single	"	"	30, "	2	2	29	Recovered.	
Abigail C. Crossfield...	61	F.	Widowed	"	"	30, "	5	5	5	"	
Rolla D. Tyler.....	28	M.	Single.	"	"	30, "					
Patrick McAtavey.....	17	"	"	"	"	30, "					

Persons discharged from the Rockingham County Asylum during the year ending September 30, 1904.

	M.	W.	Single.....	American.....	Jan.	11, 1904		
Alfred Walsh.....	51		Single.....	American.....	Jan.	11, 1904	14	Taken by people.
Charles Burnham.....	24	"	Married.....	"	Feb.	20, "	4	"
Frank Drew.....	55	"	Single.....	French.....	April	29, "	21	Taken by people.
Michael Gagne.....	25	"	"	Irish.....	May	10, "	3	"
Margaret Scott.....	40	F.	"	American.....	June	7	7	Transferred to St. Hosp.
Hattie Bean.....	36	"	"	"	Aug.	18, "	3	"
John Annis.....	33	M.	"	"	"	"	2	"
David Philbrick.....	38	"	"	"	"	18, "	14	"
Frank Walker.....	46	C.	Married.....	"	"	18, "	6	"
Harry Wilson.....	33	W.	Widowed.....	"	"	18, "	9	"
Daniel Philbrick.....	47	"	Single.....	"	"	18, "	2	"

Persons discharged from the Strafford County Almshouse during the year ending September 30, 1904.

	F.	W.	Single	Swede	April	23, 1904	Transferred to St. Hosp.
Olga Hillstrom	29				April	23, 1904	3
James Lewis	48	M.		American	"	28, "	12
William Hasche	40	"	"	French	Aug.	3, "	5
Peter Forest, Jr.		"	"	"	Sept.	9, "	10

TABLE No. 4.—Continued.— DISCHARGES.

Persons discharged from the Belknap County Almshouse during the year ending September 30, 1904.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of discharge.	How long at institution.			Condition when discharged.	
	Years.	Male.	Female.	Color.			Single, married, or widowed.	Years.	Months.		Days.
None discharged.											
<i>Persons discharged from the Carroll County Almshouse during the year ending September 30, 1904.</i>											
Amos C. Nute.....	52	M.	.....	W.	Married..	American.....	Sept. 25, 1904	1	.....	.....
<i>Persons discharged from the Merrimack County Almshouse during the year ending September 30, 1904.</i>											
Frank R. Elliott.....	46	M.	.....	W.	Widowed.	American.....	Feb. 26, 1904	.....	.....	11	Transferred to St. Hosp.
Peter Anderson.....	46	"	.....	"	Single....	Swede.....	June 1,	10	1	.....	"
George Brown.....	31	"	.....	"	"	American..	" 1,	15	11	24	"
James Clark.....	48	"	.....	"	"	English...	" 1,	16	.....	.....	"
Frank Castine.....	21	"	.....	"	"	French....	" 1,	1	3	.....	"
George Carter.....	39	"	.....	"	"	American..	" 1,	11	.....	.....	"
Edward Duckworth.....	45	"	.....	"	"	English...	" 1,	11	.....	.....	"
Edward Fiske.....	74	"	.....	"	"	American..	" 1, .....	.....	4	.....	"
Edward Lambert.....	28	"	.....	"	"	French....	" 1,	1	3	.....	"
Jacques Marthier.....	63	"	.....	"	Widowed.	Pole.....	" 1,	17	.....	.....	"
William Solon.....	44	"	.....	"	Single....	American..	" 1,	12	.....	.....	"
George Simonds.....	40	"	.....	"	"	"	" 1,	13	.....	.....	"
George Shephard.....	26	"	.....	"	"	American..	" 1,	8	.....	.....	"

Persons discharged from the Hillsborough County Almshouse during the year ending September 30, 1904.

	M.	W.	Married.	Pole.	Feb. 17, 1904				Taken to State Hospital
Poll Woolen.....	30	"	Single.	American.....	Feb. 17, "	.....	.....	14	"
Ernest Barber.....	23	"	Divorced.	Irish.....	April 4, "	4	8	4	"
James A. Lovejoy.....	47	"	Married.	Irish.....	June 24, "	.....	.....	16	"
Margaret Caligan.....	36	F.	Divorced.	American.....	June 24, "	.....	.....	1	"
Annie E. Hill.....	44	"	Widowed.	French.....	July 27, "	.....	.....	8	"
Lucie Maynard.....	70	"	Married.	Russian.....	Aug. 23, "	.....	.....	3	"
Lizzie Guilleault.....	51	"	Divorced.	Irish.....	Sept. 21, "	.....	.....	1	"
Ella Smith.....	41	"	Single.	American.....	" 21, "	.....	.....	45	"
Mary Harlin.....	30	"	"	Irish.....	" 21, "	12	9	10	"
Emma B. Bills.....	23	"	"	American.....	" 21, "	.....	.....	15	"
Katie Mullen.....	23	"	Married.	Pole.....	" 22, "	.....	.....	16	"
Mattie Hardy.....	40	"	Single.	French.....	" 22, "	14	1	21	"
Mary Daymonth.....	54	"	"	Swede.....	" 22, "	8	10	21	"
Jane Morrill.....	67	"	"	"	"	"	"	"	"
Stanilus Vicks Kelsy.....	24	M	"	"	"	"	"	"	"
Alfred Raza.....	23	"	"	"	"	"	"	"	"
Ellen Horan.....	35	F	"	"	"	"	"	"	"
Carl Nelson.....	28	M.	"	"	"	"	"	"	"

Persons discharged from the Cheshire County Almshouse during the year ending September 30, 1904.

	M.	W.	Single.	French.	April 22, 1904				Transferred to St. Hosp.
Joseph Harper.....	59	"	Single.	American.....	April 22, 1904	2	4	17	"
William Spofford.....	53	"	"	Irish.....	June 1, "	6	1	13	"
James P. Biern.....	42	"	Married.	American.....	June 1, "	6	2	20	"
M. N. Clegg.....	"	"	Single.	Irish.....	" 1, "	8	11	20	"
S. J. Doyle.....	54	"	Single.	American.....	" 1, "	8	11	25	"
D. W. Sawyer.....	69	"	Single.	English.....	" 1, "	6	2	20	"
George H. Smith.....	"	"	"	Irish.....	" 1, "	3	1	6	"
E. H. Sullivan.....	30	"	"	"	"	"	"	"	"

Persons discharged from the Sullivan County Almshouse during the year ending September 30, 1904.

	F.	W.	Widowed.	American.....	Oct. 19, 1904				Feeble
Bell Riekard.....	40	"	"	"	Oct. 19, 1904	5	18	"	"

TABLE No. 4.—Continued.—DISCHARGES.

Persons discharged from the Grafton County Almshouse during the year ending September 30, 1904.

NAMES.	AGE, SEX, AND CONDITION.					Nationality.	Date of discharge.	How long at institution.			Condition when discharged.
	Years.	Male.	Female.	Color.	Single, married, or widowed.			Years.	Months.	Days.	
Marvin Mitchell.....	62	M.	.....	W.	Widowed.	American.....	Aug. 26, 1904	6	9	....	Transferred to St. Hosp.
Willie Dysart.....	37	"	.....	"	Single....	"	" 26, "	19	9	....	"
Fred Quimby.....	38	"	.....	"	"	"	" 26, "	3	8	....	"
Charlie Cheney.....	26	"	.....	"	....	"	" 26, "	4	9	....	"

Persons discharged from the Coös County Almshouse during the year ending September 30, 1904.

Albert Adams.....	55	M.	.....	W.	.....	American.....	Single...	Sept. 19, 1904	.....	6	19	Transferred to St. Hosp.
Frank Cane.....	69	"	.....	"	.....	"	"	" 19, "	10	.....	"	"
Susie Estes.....	43	"	F.	"	.....	"	"	" 19, "	10	.....	"	"
Ed Elliott.....	71	M.	.....	"	.....	"	"	" 19, "	3	.....	"	"
Jessie Forbes.....	32	"	F.	"	.....	Canada.....	"	" 19, "	9	.....	"	"
Edgar Ingerson.....	36	M.	.....	"	.....	American.....	"	" 19, "	2	.....	"	"
Celia Kelley.....	62	"	F.	"	.....	Canada.....	Widowed.	" 19, "	25	.....	"	"
Ivin Noyes.....	44	M.	.....	"	.....	American.....	Divorced.	" 19, "	14	.....	"	"
Ella Rhodes.....	55	"	F.	"	.....	"	Single....	" 19, "	5	.....	"	"
Henry Rich.....	65	M.	.....	"	.....	"	Married..	" 16, "	10	.....	"	"

DEATHS.

TABLE No. 5.—DEATHS.

Persons who died at the New Hampshire State Hospital during the year ending September 30, 1903.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of death.	Cause of death.
	Years.	Male.	Female.	Color.	Single, married, or widowed.		
Hezekiah B. Kimball	81	M.	...	W.	Single....	Oct. 8, 1902	Exhaustion of chronic mania.
Willier Farham	43	"	...	"	Married..	Nov. 16, "	Pneumonia.
Lydia A. Orne.....	65	M.	F.	"	"	Nov. 5, "	Exhaustion in melancholia.
Henry Tukey.....	38	"	"	"	Single....	" 18, "	Paresis.
Catherine Ludden...	24	"	F.	"	Married..	" 24, "	Pulmonary tuberculosis.
Martha Twitchell...	60	"	"	"	Widowed	Dec. 13, "	Organic brain disease.
Catherine Quinlan..	60	"	"	"	"	" 18, "	"
Elbridge Corliss...	71	M.	"	"	"	" 21, "	"
Abigail S. Folsom...	82	"	F.	"	"	" 26, "	"
Melita'le Whitel' use	76	"	"	"	Single....	" 28, "	"
Nancy D. Greeley...	71	"	"	"	"	Jan. 6, 1903	"
Walter K. Barrett...	35	M.	...	"	Widowed	" 7, "	Paresis.
Catherine James...	67	"	F.	"	Divorced	" 11, "	Exhaustion of chronic mania.
John F. Randall....	40	M.	F.	"	Married..	" 22, "	Paresis.
Caroline R. West....	58	"	F.	"	Widowed	Feb. 9, "	Chronic enteritis and chronic mania
Lacy French.....	91	"	"	"	"	" 6, "	Exhaustion of senile dementia.
Eliza Bennett.....	75	"	"	"	"	" 17, "	Organic heart disease.
Samuel D. Isham....	66	M.	...	"	Single....	" 18, "	Epilepsy.
John Nichols.....	70	"	"	"	Married..	" 21, "	Carcinoma of larynx.
Hubbard H. Hunt....	68	"	"	"	Widowed	" 27, "	Apoplexy.
E. W. H. Bassett....	44	"	"	"	Married..	Mar. 2, "	Paresis.
Thomas T. Smith....	68	"	"	"	"	" 8, "	Exhaustion of melancholia.
Hannie F. Whitel' se	39	"	"	"	Widowed	" 26, "	Entero-colitis and heart disease.
Alice V. Whipple....	50	"	"	"	Married..	Apr. 1, "	Paresis.
George A. Freeto....	50	M.	...	"	Widowed	" 1, "	Asphyxia.
Warren E. Kimball..	53	"	"	"	Married..	" 22, "	Lobar-pneumonia.
William T. Little....	53	"	"	"	"	" 25, "	Structural brain disease.

David Mason.....	78	M.	W.	Single.....	New Hampshire.	May	4, 1903	Exhaustion in chronic bronchitis.
J. M. Kendall.....	70	"	"	Widowed.....	Massachusetts.	"	5, "	Exhaustion, dementia.
Horace W. Handford.....	75	"	"	Married..	New Hampshire.	"	6, "	Structural brain disease.
Mary J. Damon.....	35	M.	"	"	"	"	7, "	Exhaustion in senile dementia.
Charles W. Tobin.....	19	M.	"	Single.....	Canada.....	June	15, "	Exhaustion from acute mania.
Rose Belanger.....	69	M.	"	"	"	July	3, "	Tuberculosis.
William C. Snell.....	47	"	"	Married..	New Hampshire.	"	1, "	Cerebral hemorrhage.
Lucretia D. Dickinson.....	72	"	"	"	"	"	6, "	Paresis.
Lorenzo Tuttle..[son]	46	M.	"	Single.....	New Hampshire.	"	17, "	Exhaustion of chronic dementia.
Samuel Jenness.....	65	"	"	Married..	Ireland.....	"	29, "	Thrombosis of lateral sinus.
Daniel Owens.....	64	"	"	Widowed.....	New Hampshire.	Aug.	31, "	Chronic enteritis.
George Banks.....	42	"	"	Married..	Kentucky.....	"	9, "	Mitral regurg. and chronic nephritis.
Jacob B. Whittemore.....	51	"	"	Widowed.....	New Hampshire.	"	17, "	Cerebral hemorrhage.
Thomas C. Shaw.....	77	"	"	Married..	"	"	18, "	Senile dementia.
William H. Sargent.....	71	"	"	"	"	"	19, "	Senility.
Elbridge G. Tasker.....	72	"	"	"	"	"	21, "	"
Charles Wardour.....	52	"	"	Single.....	Russia.....	Sept.	23, "	Exhaustion from acute melancholia.
Charles B. McDuffee.....	24	"	"	Married..	"	"	25, "	General tuberculosis.
John Pughmiss.....	42	"	"	Single.....	Alabama.....	"	31, "	Lobar pneumonia.
Helen L. Ticknor.....	65	"	"	"	"	"	4, "	Exhaustion from acute melancholia.
Emeline J. Dunlap.....	74	F.	"	"	"	"	4, "	Exhaustion from organic brain disease.
M. Elizabeth Fogg.....	64	"	"	"	New Hampshire.	"	11, "	Senility.
							22, "	"

Persons who died at the Rockingham County Almshouse during the year ending September 30, 1903.

Jennie Monroe.....	83	F.	W.	Widowed.....	English.....	Nov.	2, 1902	Apoplexy.
Kate Walsh.....	55	"	"	Single.....	Irish.....	"	14, "	"
Ransom Souther.....	40	M.	"	"	American.....	Jan.	30, 1903	General paresis.
Thomas Lane.....	78	"	"	Married..	"	Mar.	8, "	Senility.
John Campbell.....	52	"	"	"	"	"	24, "	"
Fannie Locke.....	69	F.	"	Single.....	"	May	17, "	Dropsy.

Persons who died at the Strafford County Almshouse during the year ending September 30, 1903.

Annie Cassidy.....	67	F.	W.	Widowed.....	Irish.....	Apr.	29, 1903	Shock.
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TABLE NO. 5.—Continued.—DEATHS.

Persons who died at the Belknap County Almshouse during the year ending September 30, 1903.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of death.	Cause of death.
	Years.	Male.	Female.	Color.	Single, married, or widowed.		
Charles Noyes.....	28	M.	.....	W.	Single....	Aug. 3, 1903	Epilepsy.

Persons who died at the Carroll County Almshouse during the year ending September 30, 1903.

No deaths during the year.

Persons who died at the Merrimack County Asylum during the year ending September 30, 1903.

Mary Hannagan.....	65	.....	F.	W.	Single....	Irish.....	June 18, 1903	Pericarditis.
Matilda McCarty.....	74	.....	.....	.....	Widowed	American.....	Aug. 4, "	Senile debility.
John McGinnis.....	81	M.	.....	.....	"	Irish.....	Sept. 5, "	Dropsy.
Cora Batchelder.....	38	.....	F.	.....	"	American.....	" 26, "	Hemorrhage.

Persons who died at the Hillsborough County Asylum during the year ending September 30, 1903.

Daniel E. Paige.....	61	M.	W.	Single....	American.....	June 30, 1903	Cirrhosis of liver.
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Persons who died at the Cheshire County Almshouse during the year ending September 30, 1903.

	22	F.	W.	Single	American	Dec.	22, 1902	Heart disease.
Alice Iradale.....	37	M.	"	"	French.....	July	31, 1903	Typhoid fever.
George H. Orsneau....	35	"	"	"	Irish.....	Aug.	13, "	Paresis.
T. F. Houlihan.....								

Persons who died at the Sullivan County Almshouse during the year ending September 30, 1903.

	84	M.	W.	Married	American	Mar.	29, 1903	Paresis.
George Barton.....	72	"	"	Single	"	July	4, "	Disease of heart.
Richard Haywood....								

Persons who died at the Grafton County Almshouse during the year ending September 30, 1903.

No deaths during the year.

Persons who died at the Coös County Almshouse during the year ending September 30, 1903.

	31	M.	W.	Single	French	May	15, 1903	Epilepsy and insanity.
Archie Morgan.....								

TABLE No. 6.—DEATHS.

Persons who died at the New Hampshire State Hospital during the year ending September 30, 1904.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of death.	Cause of death.
	Years.	Male.	Female.	Color.	Single, married, or widowed.		
Philip G. Prescott . . .	66	M.	W.	W.	Married . . .	Oct. 13, 1903	Exhaustion from structural brain disease.
Mary Butler	70	M.	F.	"	Widowed Single . . .	" 22, "	Senility and chronic enteritis.
George P. Dunham . . .	53	M.	"	"	Single . . .	" 28, "	Diabetes.
Harriet Roberts	76	F.	"	"	Single . . .	" 29, "	Mitral regurgitation and senility.
John H. Boutelle	39	M.	"	"	Married . . .	Nov. 3, "	Brain tumor.
Cyrus Smith	68	"	"	"	Widowed . . .	" 10, "	Exhaustion in senile dementia.
Peter Duplessé	44	"	"	"	Married . . .	" 20, "	Exhaustion from paresis.
Nancy A. Ellis	82	F.	"	"	Widowed . . .	" 28, "	Senility.
Michael Delaney	44	M.	"	"	Married . . .	Dec. 1, "	Exhaustion of acute alcoholism.
Mary Blanc	50	"	"	"	Married . . .	" 2, "	Exhaustion of acute mania.
Charlotte Salls	40	"	"	"	Married . . .	" 6, "	Pernicious anaemia.
Jessie Kenney	86	M.	"	"	Widowed . . .	" 10, "	Exhaustion of acute melancholia.
John Shepard	36	M.	"	"	Single . . .	" 12, "	Senility and acute enteritis.
Emma B. Vigneault . . .	53	M.	"	"	Single . . .	" 17, "	Pulmonary tuberculosis.
George F. Phelps	76	F.	"	"	"	" 22, "	Epilepsy.
Sarah F. Wilcox	59	"	"	"	"	" 27, "	Pernicious anaemia.
Abbie Lancaster	42	"	"	"	Married . . .	Jan. 24, 1904	Enteritis and secondary anaemia.
Annie Orser	76	M.	"	"	Widowed . . .	" 8, "	Phthisis.
John E. Linton	63	"	"	"	Single . . .	" 9, "	Senility.
Warren Morgan	33	"	"	"	Married . . .	" 14, "	Erysipelas.
Fred O. Coleman	63	"	"	"	Single . . .	" 23, "	Exhaustion from acute mania.
Frank H. Hervey	23	"	"	"	Single . . .	" 27, "	Cerebral hemorrhage.
Florence Page	40	"	"	"	Single . . .	" 29, "	Uraemia.
Daniel Caverly	23	M.	"	"	Married . . .	" 27, "	Paresis.
Henry Mathes	65	"	"	"	Single . . .	Mar. 13, "	General military tuberculosis.
Charles C. Blanchard . .	56	"	"	"	Widowed . . .	" 15, "	Mitral regurgitation.
Clarence F. Burton . . .	40	"	"	"	Married . . .	" 15, "	Septic infection leg.
Flora Ruggles	40	"	"	"	Married . . .	" 22, "	Cerebral hemorrhage.

	M.	W.	Single....	New Hampshire.	Mar.	25, 1904	
Charles H. Miller.....	55	.....	Single....	New Hampshire.	Mar.	25, 1904	Structural brain disease.
Nellie T. Healey.....	28	F.	"	"	April	15, "	Status epilepticus.
Lydia Remick.....	65	.....	Married..	"	"	15, "	Exhaustion from melancholia.
Benjamin E. Badger..	72	M.	Widowed	"	"	26, "	Suicide by poisoning.
Ellen Sullivan.....	70	F.	Married..	Ireland	"	28, "	Organic dementia.
William E. Ainsworth.	57	.....	Widowed	New Hampshire.	May	2, "	Exhaustion from melancholia.
Ebenezer Emerson....	70	.....	Widowed	"	"	5, "	Mitral regurgitation.
Mary Doherty.....	54	F.	Single....	Canada	"	6, "	Epilepsy.
Elizabeth Grant.....	73	.....	Widowed	England	"	13, "	Exhaustion. Senile melancholia.
Laura S. Brown.....	52	"	Married..	New Hampshire.	"	14, "	Acute uræmia.
Margaret Cavano.....	61	"	Single....	Ireland	"	19, "	Erysipelas.
Rachel L. Clark.....	76	"	Widowed	New Hampshire.	"	24, "	Cerebral hemorrhage.
George W. Ballou.....	80	M.	Married..	"	June	27, "	"
William D. Knowles....	60	F.	"	"	"	1, "	"
Cora J. Emerson.....	39	.....	"	"	"	12, "	Cancer of uterus.
Charles E. Thayer.....	50	M.	Widowed	Maine	"	17, "	Exhaustion from organic brain dis-
Ann M. Colby.....	39	F.	Married..	New Hampshire.	"	19, "	Exhaustion from senile confusion.
Etta Garrick.....	70	.....	Married..	Massachusetts..	"	20, "	Pulmonary tuberculosis.
Dennis Gauthier.....	43	M.	"	Canada	"	21, "	Acute nephritis. [due to burn.
Thomas Maguire.....	45	.....	"	Ireland	"	25, "	Paresis. Acute suppression of urine.
Sarah Baker.....	40	F.	"	New Hampshire.	"	25, "	Exhaustion from acute confusional
	47	.....	"	"	"	26, "	insanity.
Elizabeth A. Mack.....	86	.....	Widowed	"	July	11, "	Exhaustion in senile melancholia.
Edward Fisk.....	74	M.	Single....	"	"	15, "	Senile dementia.
Elizabeth Woodward..	45	F.	Married..	"	"	20, "	Suicide by suspension.
Emma Tibbets.....	53	.....	Widowed	"	"	21, "	Paresis.
George Frazier.....	55	M.	Married..	"	"	21, "	General debility.
Mary J. Campbell.....	55	.....	"	"	"	22, "	Acute enteritis.
Gilman Johnson.....	68	M.	Widowed	"	"	22, "	Myocarditis.
Sarah White.....	64	F.	Divorced.	"	"	25, "	Chronic dementia.
Charles F. Pope.....	76	.....	Married..	Massachusetts..	"	25, "	Senile dementia.
Mary F. Bickford.....	79	M.	"	"	"	26, "	Senile dementia and acute diarrhœa.
Mary A. Whalen.....	74	F.	Widowed	Ireland	Aug.	30, "	Senile dementia and acute enteritis.
Nellie F. Gamsby.....	63	.....	Married..	New Hampshire.	"	1, "	Chronic dementia and acute diarrhœa.
Marcellus Willard.....	20	M.	"	"	"	6, "	Organic brain disease.
Winthrop G. Torsey...	49	"	Married..	"	"	2, "	"
Marinda Lamprey.....	64	.....	Married..	"	"	6, "	"
Ira Colby.....	65	F.	Single....	"	Sept.	9, "	Acute enteritis.
Fannie Doherty.....	60	M.	Widowed	"	"	18, "	Chronic nephritis.
Nancy J. Hickey.....	33	F.	Single....	"	"	27, "	Exhaustion in senile dementia.
Phoebe A. Mills.....	45	.....	Married..	Ireland	"	2, "	Pulmonary tuberculosis.
Wilbur W. Dickey.....	75	"	Single....	Vermont	"	25, "	"
	38	M.	Married..	New Hampshire.	"	29, "	Exhaustion in senile dementia.
		.....	Married..	"	"	29, "	Paresis.

TABLE No. 6.—Continued.—DEATHS.

Persons who died at the Rockingham County Asylum during the year ending September 30, 1904.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of death.	Cause of death.
	Years.	Male.	Female.	Color.	Single, married, or widowed.		
Martha Hilton.....	62	.....	F.	W.	Single....	Oct. 25, 1903	Paralysis.
Martha Towle.....	85	.....	"	"	Widowed	Nov. 24, "	Terminal dementia.
James Douny.....	59	M.	.....	"	Single....	Feb. 23, 1904	Asthma and congestion of lungs.
Thomas Jameson.....	70	"	.....	"	Widowed	Mar. 30, "	Terminal dementia.

Persons who died at the Strafford County Almshouse during the year ending September 30, 1904.

None.

Persons who died at the Belknap County Almshouse during the year ending September 30, 1904.

William Stevens.....	28	M.	.....	W.	Single....	Mar. 20, 1904	Insanity.
Angie Gilman.....	41	.....	F.	"	.....	June 6, "	"

Persons who died at the Carroll County Almshouse during the year ending September 30, 1904.

Annie M. Felch.....	43	.....	F.	W.	Married..	July 20, 1904	Consumption.
					American.....		

Persons who died at the Merrimack County Almshouse during the year ending September 30, 1904.

Hannah Chase.....	76	.....	F.	W.	Widowed	English.....	Nov. 19, 1903	Chronic cystitis.
Mary Heath.....	51	.....	"	"	Married..	American.....	Dec. 29, "	Epilepsy.
Jane Patterson.....	50	.....	"	"	Widowed	Scottish	30, "	Exhaustion of insanity.
Charles Tenney.....	59	M.	.....	.....	.....	American.....	Jan. 19, 1904	Myocarditis.

Persons who died at the Hillsborough County Asylum during the year ending September 30, 1904.

Anthony Pare.....	80	M.	.....	W.	Married..	French.....	Dec. 22, 1903	Paralysis from apoplexy.
Abner K. Lewis.....	87	"	.....	"	"	American.....	Apr. 26, 1904	Old age.
Addie McCarty.....	57	F.	.....	"	"	Irish.....	Aug. 18, "	Chronic dementia.
James W. Wilder.....	23	M.	.....	"	Single....	American.....	19, "	Hemorrhage of stomach.

Persons who died at the Cheshire County Almshouse during the year ending September 30, 1904.

Mary Doyle.....	71	F.	W.	Widowed	Irish.....	Dec. 2, 1903	
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Persons who died at the Sullivan County Almshouse during the year ending September 30, 1904.

Elizabeth Severy.....	71	.....	F.	W.	Widowed	Scottish	July 29, 1901	Cholera morbus.
Edna Nichols.....	85	.....	"	"	Single....	American.....	Aug. 6, "	Parosis.

Persons who died at the Grafton County Almshouse during the year ending September 30, 1904.

Alpha Hardy.....	56	M.	W.	Widowed	American.....	July 13, 1904	Paralysis.
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Persons who died at the Coös County Almshouse during the year ending September 30, 1904.

None.

TABLE No. 7.

Persons committed to the New Hampshire State Hospital by order of the Commissioners of Lunacy, for remedial treatment, not including those whose complete record is given in former reports.

NAMES.	Where from— Counties.	Remedial treatment at state hospital commenced.	Date of dis- charge from remedial treatment.
Ada E. Carr.....	Sullivan.....	Sept. 6, 1894	.....
Mary A. Holland.....	Hillsborough.....	Jan. 18, 1896	.....
William H. Lee.....	Merrimack.....	Dec. 7, 1896	.....
Jennie Spaulding.....	.....	Mar. 3, 1898	April 18, 1904
Mary Driscoll.....	Hillsborough.....	16, 1898	.....
Sarah H. Potter.....	Merrimack.....	Dec. 26, 1898	.....
Ivanho Dionne.....	Strafford.....	Jan. 25, 1899	.....
Charles W. Diederich.....	Merrimack.....	Feb. 10, 1899	.....
Edith Clark.....	.....	July 24, 1899	.....
Susan M. Wilder.....	Cheshire.....	Nov. 16, 1899	.....
Esther Emerson.....	Sullivan.....	July 1, 1900	Nov. 29, 1902
Stephen A. Marston.....	Merrimack.....	2, 1900	.....
Simon Bourdeau.....	".....	Sept. 26, 1900	.....
Martin Cashin.....	".....	Nov. 3, 1900	.....
Etta L. Goodwin.....	".....	Dec. 11, 1900	Mar. 9, 1903
George L. Greeley.....	".....	Jan. 1, 1901	.....
Hattie L. Evans.....	Grafton.....	11, 1901	.....
Benjamin Cook.....	Merrimack.....	Mar. 14, 1901	.....
Belle Sargent.....	.....	May 9, 1901	.....
Isabelle J. Ireland.....	Sullivan.....	27, 1901	.....
Eugene Mulligan.....	Grafton.....	June 20, 1901	Aug. 27, 1903
Annie Everett.....	Cheshire.....	July 1, 1901	.....
John O'Toole.....	Hillsborough.....	3, 1901	.....
Anna M. Grant.....	Merrimack.....	11, 1901	.....
Frank W. Young.....	.....	30, 1901	.....
Nellie McQuade.....	Carroll.....	Sept. 5, 1901	.....
Celina Roberts.....	Hillsborough.....	21, 1901	.....
Margaret Spaulding.....	Merrimack.....	25, 1901	.....
Lydia Nicodeme.....	Sullivan.....	30, 1901	.....
Ida F. Johnson.....	Merrimack.....	Oct. 1, 1901	Nov. 6, 1902
Isabelle W. Merrill.....	Grafton.....	1, 1901	.....
Frederic H. Edgerly.....	Carroll.....	Dec. 2, 1901	.....
Edward L. Cady.....	Merrimack.....	19, 1901	.....
Edward F. Tedford.....	Grafton.....	20, 1901	.....
Marcellus Willard.....	Cheshire.....	Feb. 8, 1902	Aug. 6, 1904
Zenaid Roberts.....	Strafford.....	Mar. 1, 1902	.....
Catherine O'Connor.....	Rockingham.....	3, 1902	July 3, 1903
Cornelius Scollard.....	Hillsborough.....	17, 1902	.....
John Ekblad.....	Rockingham.....	21, 1902	.....
Florence Robinson.....	Hillsborough.....	25, 1902	.....
Burtis A. Crocker.....	Cheshire.....	April 1, 1902	.....
Olive A. Lawrence.....	Belknap.....	25, 1902	July 23, 1903
Charles M. Stevens.....	Hillsborough.....	25, 1902	.....
Mary L. Huckins.....	Cheshire.....	May 9, 1902	June 19, 1903
Ermina E. Ingraham.....	Strafford.....	20, 1902	Dec. 30, 1903
Mary McNamara.....	Hillsborough.....	20, 1902	May 2, 1903
Peter Filion.....	Grafton.....	20, 1902	.....
Henry W. Bombard.....	Merrimack.....	22, 1902	April 8, 1903
Annie Howe.....	Hillsborough.....	June 13, 1902	23, 1903
Horace W. Handford.....	Grafton.....	28, 1902	Jan. 1, 1903
Christina Russell.....	.....	July 11, 1902	Oct. 27, 1902
Josephine Regis.....	Rockingham.....	21, 1902	April 19, 1903
Emma E. Wills.....	Strafford.....	23, 1902	Oct. 18, 1902
Chester C. Meade.....	Carroll.....	24, 1902	June 1, 1903

TABLE No. 7.—Continued.

NAMES.	Where from— Counties.	Remedial treatment at state hospital commenced.	Date of dis- charge from remedial treatment.
Frank Laroche.....	Sullivan.....	July 24, 1902	.....
Frank Yarrington.....	".....	24, 1902	.....
Thomas T. Smith.....	".....	Aug. 1, 1902	Mar. 8, 1903
Rhoda M. Gilbert.....	Grafton.....	8, 1902	13, 1903
Ida A. Currier.....	Hillsborough.....	12, 1902	.....
Sarah W. Scott.....	Grafton.....	Sept. 5, 1902	.....
Emma Cuddely.....	Sullivan.....	10, 1902	Feb. 10, 1903
Ida G. Nute.....	Carroll.....	22, 1902	May 11, 1903
Florence Page.....	Cheshire.....	Oct. 1, 1902	Feb. 27, 1904
Obeline Duplesse.....	".....	1, 1902	.....
Helen Hart.....	Strafford.....	4, 1902	.....
Charlotte Collins.....	Merrimack.....	13, 1902	.....
John Sheehan.....	Belknap.....	17, 1902	May 25, 1903
Josephine Trudeau.....	Hillsborough.....	5, 1902	Dec. 31, 1902
Frank Le Sarge.....	Strafford.....	6, 1902	Nov. 22, 1902
Nellie M. Newcomb.....	".....	6, 1902	Jan. 3, 1903
Mary Cutter.....	Grafton.....	12, 1902	.....
Mary Morano.....	Merrimack.....	13, 1902	Nov. 18, 1902
Catharine A. Harris.....	Belknap.....	20, 1902	July 6, 1903
Aldea Vachon.....	Hillsborough.....	22, 1902	Aug. 9, 1904
Richard Beers.....	Merrimack.....	25, 1902	.....
Aurant Betham.....	".....	Dec. 4, 1902	.....
Sarah Rand.....	Rockingham.....	13, 1902	July 11, 1903
Clara Hazel.....	".....	18, 1902	.....
Frank J. Caswell.....	Merrimack.....	19, 1902	April 5, 1903
Peter LeMar.....	Grafton.....	26, 1902	Mar. 25, 1904
James H. Wilson.....	Strafford.....	30, 1902	Jan. 23, 1903
Arthur Bailou.....	Cheshire.....	Jan. 1, 1903	May 1, 1903
John Fecteau.....	Strafford.....	1, 1903	.....
Mary Desiere.....	Hillsborough.....	1, 1903	Feb. 21, 1903
Amos C. Nute.....	Carroll.....	2, 1903	Jan. 30, 1903
Emil Johnson.....	Merrimack.....	8, 1903	Aug. 15, 1903
Michael McCarty.....	Strafford.....	8, 1903	June 30, 1903
Katherine Voudry.....	Grafton.....	8, 1903	Mar. 2, 1903
Peter Duplessie.....	".....	10, 1903	Nov. 20, 1903
Isabelle Smith.....	Sullivan.....	13, 1903	.....
Zoel Emery.....	Cheshire.....	20, 1903	.....
Homer D. Trask.....	".....	27, 1903	July 1, 1903
Louis Champagne.....	Hillsborough.....	27, 1903	.....
George Banks.....	".....	28, 1903	Aug. 17, 1903
Octave LaCroix.....	Sullivan.....	29, 1903	July 12, 1904
Arthur Petrin.....	Merrimack.....	Feb. 4, 1903	.....
Annie Eagan.....	Sullivan.....	6, 1903	.....
Annie A. Gibbons.....	Hillsborough.....	6, 1903	Aug. 19, 1903
Mabel Nash.....	".....	17, 1903	July 27, 1903
Marion E. McArthur.....	Rockingham.....	19, 1903	Oct. 31, 1903
Sarah M. Goodhue.....	Cheshire.....	23, 1903	Mar. 7, 1903
Julia Tredick.....	Rockingham.....	24, 1903	Dec. 31, 1903
Patrick Ralph.....	Merrimack.....	25, 1903	.....
George Fisher.....	".....	25, 1903	.....
William Nimmo.....	Strafford.....	25, 1903	Sept. 15, 1904
Charles Hoyt.....	Merrimack.....	25, 1903	.....
Eliza A. Wells.....	".....	26, 1903	July 1, 1903
George Frazier.....	".....	26, 1903	21, 1904
Melissa Shaw.....	".....	26, 1903	.....
Margaret Collins.....	Cheshire.....	28, 1903	Dec. 15, 1903
John Ravina.....	Sullivan.....	Mar. 2, 1903	Mar. 10, 1903
Rose Dumais.....	Strafford.....	6, 1903	.....
John W. Gibbs.....	".....	7, 1903	April 10, 1903
Alphonse Jenelle.....	Hillsborough.....	10, 1903	May 17, 1904
Abraham Humphrey.....	Coös.....	12, 1903	.....
William Coleman.....	Merrimack.....	13, 1903	.....
Julia Toomey.....	".....	13, 1903	.....
Warren Morgan.....	".....	13, 1903	Feb. 9, 1904

TABLE No. 7. — *Continued.*

NAMES.	Where from— Counties.	Remedial treatment at state hospital commenced.	Date of dis- charge from remedial treatment.
Edwin P. Blood.....	Merrimack	Mar. 13, 1903	.....
Bridget Tierney.....	"	13, 1903	.....
Ella Ordway.....	"	14, 1903	.....
W. J. Alexander.....	Sullivan	17, 1903	July 21, 1903
Arrabella E. Wills.....	Strafford	1, 1903	.....
Alfred K. Brown.....	Rockingham	1, 1903	.....
Eva M. Corson.....	"	1, 1903	.....
Mary J. Campbell.....	Cheshire.....	1, 1903	July 22, 1904
George A. Roles.....	Carroll	1, 1903	June 2, 1903
Ida B. Libby.....	Strafford.....	1, 1903	.....
Herman J. Choschy.....	Sullivan.....	1, 1903	.....
George M. Worcester	Strafford.....	1, 1903	.....
John H. Berry.....	"	1, 1903	.....
Nora Quaid.....	"	1, 1903	.....
Marianna Marston.....	Merrimack	1, 1903	.....
Charles Willey.....	Strafford.....	1, 1903	.....
Peter Parra.....	"	1, 1903	.....
Michael Donovan.....	"	1, 1903	.....
Maysie Whitehouse.....	Rockingham	1, 1903	.....
Frank Dansereault.....	Strafford	1, 1903	.....
Ophelia Cossette.....	"	1, 1903	.....
Ida Levine.....	"	1, 1903	.....
Bridget Madden.....	"	1, 1903	.....
Lewis Lawrence.....	Sullivan.....	1, 1903	.....
Rachel Clark.....	Strafford	1, 1903	May 24, 1904
William Martin.....	Carroll	1, 1903	.....
William T. Little.....	Hillsborough	2, 1903	April 25, 1903
Rose Belanger.....	"	2, 1903	June 3, 1903
Sarah L. Melancom.....	"	3, 1903	.....
John Pushmiss.....	Cheshire.....	7, 1903	Sept. 4, 1903
Warren E. Kimball.....	Strafford.....	10, 1903	April 22, 1903
James H. Tucker.....	Cheshire.....	10, 1903	.....
Walter Irving Abbott.....	Merrimack	13, 1903	May 10, 1903
Eva A. Thompson.....	Carroll	27, 1903	June 28, 1903
Nora Wright.....	Sullivan.....	29, 1903	.....
Diana Guertin.....	Strafford.....	May 1, 1903	.....
Winthrop G. Torsey.....	Belknap.....	8, 1903	Aug. 18, 1904
Martha Jackson.....	Strafford.....	13, 1903	June 1, 1903
H. William Little.....	Grafton.....	20, 1903	.....
Selina Charois.....	Hillsborough	22, 1903	.....
Joseph P. Weeks.....	Coös.....	June 3, 1903	Dec. 3, 1903
Mina Suzor.....	Grafton.....	9, 1903	.....
Flora Ruggles.....	Coös.....	9, 1903	Mar. 22, 1904
Carrie M. Tibbets.....	Strafford.....	10, 1903	.....
Annette Lawson.....	Hillsborough	15, 1903	.....
Kate O'Neil.....	Merrimack	21, 1903	Nov. 9, 1903
Frank J. Caswell.....	"	23, 1903	Oct. 19, 1903
Eva J. Porter.....	Coös.....	23, 1903	.....
Hervey Marion.....	Hillsborough	23, 1903	.....
Helen L. Story.....	Belknap.....	25, 1903	June 2, 1904
Margaret O'Brien.....	"	27, 1903	.....
Lottie J. Smith.....	Grafton.....	July 1, 1903	.....
Mary A. Furbush.....	Strafford.....	1, 1903	.....
Michael F. Burke.....	Hillsborough	2, 1903	Nov. 7, 1903
Margaret Kerrigan.....	"	3, 1903	Nov. 14, 1903
Louise E. King.....	"	3, 1903	.....
John H. Clancey.....	Coös.....	10, 1903	.....
Addie S. Uline.....	Grafton.....	10, 1903	Jan. 13, 1904
Etta L. Goodwin.....	Merrimack.....	11, 1903	.....
Russell Noyes.....	Coös.....	13, 1903	.....
Harry Rowe.....	Strafford.....	22, 1903	.....
Rosanna Gignac.....	Belknap.....	22, 1903	.....
Annie Orser.....	Grafton.....	Aug. 14, 1903	Jan. 24, 1904
Margret Parr.....	Hillsborough	17, 1903	.....

TABLE No. 7.—Continued.

NAMES.	Where from— Counties.	Remedial treatment at state hospital commenced.	Date of dis- charge from remedial treatment.
Henrietta Glines.....	Merrimack.....	Aug. 17, 1903	Feb. 25, 1904
Mary C. Spinney.....	Rockingham.....	24, 1903	Sept. 30, 1903
Ralph Myers.....	Grafton.....	Sept. 2, 1903	
Sarah E. Rundlett.....	Hillsborough.....	2, 1903	
Daniel W. Caverly.....	Belknap.....	22, 1903	Feb. 29, 1904
Ira Colby.....	Rockingham.....	24, 1903	Sept. 2, 1904
Thomas Hubley.....	".....	24, 1903	
William Garland.....	".....	24, 1903	
Thomas Richardson.....	".....	24, 1903	
Ebenezer K. Emerson.....	".....	24, 1903	May 5, 1904
Louis Elsner.....	".....	24, 1903	
Eva Haley.....	Hillsborough.....	26, 1903	Jan. 2, 1904
John H. Boutelle.....	".....	29, 1903	Nov. 3, 1903
Louisa F. Johnson.....	Merrimack.....	Oct. 1, 1903	
Philander Moore.....	Grafton.....	1, 1903	
Emma J. Burr.....	Sullivan.....	1, 1903	
Warren K. French.....	Cheshire.....	2, 1903	
Nellie Quimby.....	Merrimack.....	2, 1903	March 9, 1904
Auguste Fillion.....	Strafford.....	6, 1903	
Mary Blanc.....	Merrimack.....	9, 1903	Dec. 2, 1903
Charles H. Miller.....	Belknap.....	19, 1903	March 25, 1904
Anna E. Fogg.....	Carroll.....	19, 1903	
Bridget Lee.....	Hillsborough.....	20, 1903	
George P. Dunham.....	Belknap.....	22, 1903	Oct. 28, 1903
Everett W. Newell.....	Cheshire.....	23, 1903	Dec. 24, 1903
Herbert E. Farnham.....	Carroll.....	30, 1903	
Francis H. Weed.....	Sullivan.....	30, 1903	Nov. 27, 1903
Margaret Roberts.....	Rockingham.....	Nov. 10, 1903	April 2, 1904
James Good.....	Cheshire.....	10, 1903	
James A. Palmer.....	Strafford.....	14, 1903	
John P. Welch.....	Hillsborough.....	16, 1903	
Jennie Piper.....	Rockingham.....	26, 1903	
John White.....	Grafton.....	Dec. 3, 1903	
Fred L. Drown.....	Merrimack.....	6, 1903	
John E. Manderville.....	Grafton.....	18, 1903	
Annie Hayward.....	Merrimack.....	19, 1903	
Minnie Noffty.....	".....	24, 1903	
Louis Dionne.....	Hillsborough.....	28, 1903	
Ezra Howard.....	Cheshire.....	30, 1903	
John C. Howe.....	Sullivan.....	31, 1903	
Josephine K. Kelley.....	Hillsborough.....	Jan. 1, 1904	
Edward F. Welch.....	Rockingham.....	1, 1904	
Betsey E. Grant.....	Carroll.....	1, 1904	
Josephine Taylor.....	Belknap.....	15, 1904	
Rose Foreman.....	Hillsborough.....	19, 1904	
Charles N. Huntress.....	Belknap.....	25, 1904	Feb. 18, 1904
Lydia Remick.....	Strafford.....	2, 1904	April 15, 1904
Zenaid Drouin.....	Hillsborough.....	5, 1904	June 23, 1904
John Johnson.....	Sullivan.....	6, 1904	
Poll Woolen.....	Hillsborough.....	17, 1904	
Ernest Barber.....	".....	17, 1904	
Annda Fernstrom.....	".....	18, 1904	
Irving A. Heath.....	Sullivan.....	24, 1904	March 11, 1904
Eliza Moody.....	Hillsborough.....	25, 1904	Sept. 19, 1904
Alicia M. Davis.....	Grafton.....	26, 1904	
Frank R. Elliott.....	Merrimack.....	26, 1904	May 29, 1904
Elmer R. Bean.....	Rockingham.....	Mar. 7, 1904	April 18, 1904
Mary Ellsmore.....	Coo's.....	9, 1904	
Dennis Gauthier.....	Hillsborough.....	10, 1904	June 21, 1904
Oscar Hall.....	Merrimack.....	11, 1904	
Hugh McLachlain.....	Cheshire.....	12, 1904	March 24, 1904
Forest L. Bickford.....	Strafford.....	12, 1904	July 21, 1904
Warren E. Smith.....	Belknap.....	15, 1904	Aug. 23, 1904
Sarah E. Russell.....	Strafford.....	28, 1904	

TABLE No. 7.—*Continued.*

NAMES.	Where from— Counties.	Remedial treatment at state hospital commenced.	Date of dis- charge from remedial treatment.
Marcelene Mongeau.....	Hillsborough	Apr. 1, 1904	.....
Julia White.....	Rockingham	1, 1904	.....
Luella L. Freeto	Grafton	1, 1904	.....
James H. Roper.....	Hillsborough	1, 1904	.....
Ulric Marcott.....	Grafton	1, 1904	.....
Eva Haley.....	Hillsborough	16, 1904	Sept. 10, 1904
Gilman Johnson	Rockingham	18, 1904	July 23, 1904
Frank J. Caswell.....	Merrimack	20, 1904	.....
Joseph Harper.....	Cheshire	22, 1904	.....
William Spofford.....	"	22, 1904	.....
Olga Hillstrom.....	Strafford	23, 1904	.....
Edward H. Ward.....	"	28, 1904	June 8, 1904
Harry S. Flanders.....	Rockingham	28, 1904	May 30, 1904
James Lewis.....	Strafford	28, 1904	.....
Mary R. Young	Hillsborough	28, 1904	Sept. 27, 1904
Mary Poliquin.....	"	30, 1904	.....
Etta Garrick.....	Belknap.....	May 1, 1904	June 19, 1904
Patrick McAtavey.....	Strafford.....	2, 1904	Sept. 30, 1904
John Foley.....	Merrimack	2, 1904	July 29, 1904
Ellen O. Davis.....	Rockingham	2, 1904	6, 1904
Eli A. Sawtelle.....	Hillsborough	4, 1904	.....
David Bryden.....	Strafford.....	9, 1904	.....
Mary McNamara.....	Hillsborough	13, 1904	.....
Louis Basillon.....	"	14, 1904	July 23, 1904
Elinore Janelle.....	"	14, 1904	.....
Lillian Andrews.....	Belknap	16, 1904	Aug. 6, 1904
Charles E. Thayer.....	Grafton	22, 1904	June 17, 1904
Vasco Kennedy.....	Sullivan	26, 1904	23, 1904
David Sawyer.....	Cheshire.....	June 1, 1904	.....
George R. Smith.....	"	1, 1904	.....
James P. Beirne.....	"	1, 1904	.....
William M. Clegg.....	"	1, 1904	.....
Sylvester Doyle.....	"	1, 1904	.....
Edward Sullivan.....	"	1, 1904	.....
Michael Dumphy.....	Strafford.....	1, 1904	.....
James Clark.....	Merrimack	1, 1904	.....
Peter Anderson.....	"	1, 1904	.....
William Solon.....	"	1, 1904	.....
George Shepard.....	"	1, 1904	.....
Edward Fisk.....	"	1, 1904	July 15, 1904
Frank Castagne.....	"	1, 1904	.....
Edward Lambert.....	"	1, 1904	.....
George W. Simonds	"	1, 1904	.....
George Carter.....	"	1, 1904	.....
George W. Brown.....	"	1, 1904	.....
Mary L. Huckins.....	Belknap	3, 1904	.....
George Parker.....	Sullivan	3, 1904	.....
Ellen T. Jesseman.....	Grafton	4, 1904	.....
Eviste Gagnon.....	Hillsborough	4, 1904	.....
Harry S. Flanders.....	Rockingham	4, 1904	Sept. 23, 1904
Lawrence Cooney.....	Cheshire.....	7, 1904	.....
Harriet L. Wallace.....	Carroll.....	9, 1904	.....
Hattie Bean.....	Rockingham	9, 1904	.....
Laura C. Berry.....	Strafford.....	10, 1904	.....
John C. Burpee.....	Merrimack	19, 1904	.....
Anthony Joyce.....	Hillsborough	21, 1904	Sept. 7, 1904
Margaret Kerrigan.....	"	23, 1904	.....
Annie E. Hill.....	"	23, 1904	.....
Carroll E. Judkins.....	Strafford	27, 1904	.....
Lucie Maynard.....	Hillsborough	29, 1904	.....
Mignonette Seavey.....	Strafford.....	29, 1904	.....
Gustave A. Billet.....	Belknap.....	July 1, 1904	.....

TABLE No. 7.—Continued.

NAMES.	Where from— Counties.	Remedial treatment at state hospital commenced.	Date of dis- charge from remedial treatment.
Priscilla H. Lindsey.....	Hillsborough.....	July 1, 1904	
Lulu B. Johnson.....	"	1, 1904	
Jennie Whittemore.....	"	1, 1904	
Louis E. Banyea.....	Cheshire.....	1, 1904	
Samuel Mercer.....	Merrimack.....	1, 1904	
Edwin L. Berry.....	Rockingham.....	5, 1904	
Henry Jackson.....	Coös.....	6, 1904	
Elizabeth Robinson.....	Strafford.....	11, 1904	
Belle Lamar.....	Grafton.....	12, 1904	
Eleanor M. Johnson.....	Rockingham.....	14, 1904	
Maud Kempton.....	Sullivan.....	21, 1904	July 28, 1904
Milton P. Sawyer.....	Cheshire.....	22, 1904	
Annie C. Kimball.....	Belknap.....	23, 1904	
Emma Levermoir.....	Hillsborough.....	23, 1904	
Lizzie Guilbeault.....	"	27, 1904	
Wilbur W. Dickey.....	"	Aug. 1, 1904	Sept. 29, 1904
Charlotte Harriman.....	Carroll.....	1, 1904	
Mary A. Hendrix.....	Cheshire.....	3, 1904	
William Hasche.....	Strafford.....	3, 1904	
Charles Cheney.....	Grafton.....	5, 1904	
Fred L. Quimby.....	"	5, 1904	
Marvin Mitchell.....	"	5, 1904	
Willie Dysart.....	"	5, 1904	
Felix Geoffron.....	Hillsborough.....	5, 1904	
David Philbrick.....	Rockingham.....	17, 1904	
Daniel Philbrick.....	"	17, 1904	
Harry Wilson.....	"	17, 1904	
Frank Walker.....	"	17, 1904	
John Corrigan.....	Coös.....	19, 1904	
Etta Smith.....	Hillsborough.....	25, 1904	
Mina B. Copp.....	Belknap.....	29, 1904	
Elizabeth A. Dearborn.....	Rockingham.....	31, 1904	
Frank J. Bennett.....	Hillsborough.....	31, 1904	
Peter White.....	Grafton.....	Sept. 1, 1904	
Mary Harlan.....	Hillsborough.....	3, 1904	
James Pendergast.....	Strafford.....	9, 1904	
Ellen Gibbs.....	Rockingham.....	9, 1904	
Jennie Spalding.....	Merrimack.....	10, 1904	
Elmer Bean.....	Rockingham.....	12, 1904	
James McGarey.....	Coös.....	13, 1904	
Michael Fagan.....	Merrimack.....	13, 1904	
Susie Estes.....	Coös.....	19, 1904	
Irving Noyes.....	"	19, 1904	
Jessie Forbes.....	"	19, 1904	
Frank Cone.....	"	19, 1904	
Edward Elliott.....	"	19, 1904	
Albert Adams.....	"	19, 1904	
Edward Ingerson.....	"	19, 1904	
David J. Day.....	"	19, 1904	
Ella Rhodes.....	"	19, 1904	
Celia Kelley.....	"	19, 1904	
Jane Morrill.....	Hillsborough.....	21, 1904	
Mattie E. Hardy.....	"	21, 1904	
Kate Mullen.....	"	21, 1904	
Emma B. Bills.....	"	21, 1904	
Mary Daymouth.....	"	21, 1904	
Martha D. Hayes.....	Strafford.....	22, 1904	
Stanlius Vicks Kelsy.....	Hillsborough.....	22, 1904	
Alfred Raza.....	"	22, 1904	
Carl Nelson.....	"	22, 1904	
Ellen Horan.....	"	22, 1904	

TABLE No. 8.

For the two years ending September 30, 1904.

Whole number of cases receiving remedial treatment by order of the board.....	248
Whole number of cases treated during the two years.....	369
Whole number of cases discharged.....	121
Committed for remedial treatment.....	307
Committed for remedial treatment and discharged.....	99
Remaining.....	208
Previously committed and remaining.....	62
Previously committed and discharged.....	22
Remaining.....	40
Whole number committed for remedial treatment to present time....	1,012
Whole number discharged from remedial treatment to present time..	764
Whole number receiving remedial treatment at the present time	248

TABLE No. 9.

For the two years ending September 30, 1904.

CONDITION WHEN DISCHARGED.	Recovered.	Improved.	Unimproved.	Deceased.	Total.
Committed and discharged.....	46	18	9	26	99
Percentage to number committed.....	14.98	5.86	2.93	8.46	32.24
Previously committed, but discharged during 1903-1904.....	11	7	2	2	22
Total percentages.....	15.44	6.77	2.98	7.58	32.79

TABLE No. 10.—RECAPITULATION.

The following shows the number of commitments, discharges, and deaths at the institutions named, during the year ending September 30, 1903, also the number of inmates remaining at these institutions at the latter date, as shown by the records of the board.

ASYLUMS FOR INSANE.	Inmates Oct. 1, 1903.	Commitments during the year ending Sept. 30, 1903.	Discharged.	Deaths.
New Hampshire Asylum for the Insane	490	240	165	50
Rockingham County Asylum	54	5	9	6
Strafford County Asylum	6	1	1	1
Belknap County Almshouse	9	2	1	1
Carroll County Asylum	10	1	1	1
Merrimack County Asylum	16	20	14	4
Hillsborough County Asylum	88	14	14	1
Cheshire County Asylum	38	2	1	3
Sullivan County Asylum	22	1	3	2
Grafton County Asylum	14	1	3	1
Coös County Asylum	12	3	3	1
Total for state	759	289	198	69

TABLE No. 11.—RECAPITULATION.

The following shows the number of commitments, discharges and deaths at the institutions named, during the year ending September 30, 1904, also the number of inmates remaining at these institutions at the latter date, as shown by the records of the board.

ASYLUMS FOR INSANE.	Inmates Oct. 1, 1904.	Commitments dur- ing the year end- ing Sept. 30, 1904.	Discharged.	Deaths.
New Hampshire State Hospital.....	580	303	143	69
Rockingham County Asylum.....	56	12	11	4
Strafford County Asylum.....	4	4	4	.....
Belknap County Asylum.....	8	.....	.....	2
Carroll County Asylum.....	7	.....	1	1
Merrimack County Asylum.....	25	2	13	4
Hillsborough County Asylum.....	74	14	18	4
Cheshire County Asylum.....	37	3	8	1
Sullivan County Asylum.....	8	1	1	2
Grafton County Asylum.....	14	.....	4	1
Coös County Asylum.....	13	1	10	.....
Total for state.....	826	340	213	88

TABLE No. 12.

Number of inmates at each asylum in the state on September 30 of each year.

NAMES OF ASYLUMS.	1899	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
New Hampshire State Hospital ...	331	365	374	357	308	401	414	424	422	409	427	425	434	464	490	580
Rockingham County Asylum.....	51	49	48	50	46	55	59	59	67	69	70	74	70	64	54	56
Strafford County Asylum.....	42	35	32	51	*	.....	.....	.....	.....	.....	3	3	3	7	6	4
Belknap County Asylum	11	11	11	9	9	8	8	6	9	9	11	10	8	9	9	8
Carroll County Asylum.....	24	21	20	14	14	14	14	14	11	13	13	12	11	10	10	7
Merrimack County Asylum.....	46	43	42	43	45	43	46	50	45	47	53	55	57	*	16	25
Hillsborough County Asylum	48	61	65	71	76	86	89	93	87	91	85	83	86	90	88	74
Cheshire County Asylum	15	16	25	20	21	24	34	32	24	35	38	39	39	40	38	37
Sullivan County Asylum.....	21	14	12	13	13	13	9	7	19	19	22	24	23	26	22	8
Grafton County Asylum.....	31	27	30	23	22	21	21	22	22	23	24	21	20	13	14	14
Cocös County Asylum.....	14	15	15	19	15	16	18	18	24	18	18	14	17	13	12	13
Total	634	657	674	670	629	684	712	725	730	733	764	760	768	736	759	826

* All transferred to N. H. State Hospital on account of the destruction of the Almshouse by fire.

NEW HAMPSHIRE AGRICULTURE.

REPORT

OF THE

BOARD OF AGRICULTURE

FROM

JANUARY 1, 1903, TO JANUARY 1, 1905.

BY N. J. BACHELDER, SECRETARY.

NASHUA, N. H.:
TELEGRAPH PUBLISHING COMPANY, PRINTERS.
1905.

BOARD OF AGRICULTURE.

ORGANIZED AUGUST 23, 1870.

MEMBERS 1903-1904.

HIS EXCELLENCY NAHUM J. BACHELDER.

JOSEPH B. WALKER, President	.	.	Concord.
ALDEN F. SANBORN,	.	.	Fremont.
GEORGE H. WADLEIGH	.	.	Tilton.
THADDEUS W. BARKER	.	.	Nelson.
EDWARD E. BISHOP	.	.	Bethlehem.
CHARLES E. KING	.	.	Whitefield.
DANIEL C. WESTGATE	.	.	Plainfield.
HERBERT O. HADLEY	.	.	Temple.
CHARLES B. HOYT	.	.	Sandwich.
JOSEPH D. ROBERTS	.	.	Rollinsford.

N. J. BACHELDER, Secretary.

COMPLETE LIST OF MEMBERS

OF THE

STATE BOARD OF AGRICULTURE.

August 23, 1870—May 1, 1871.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	Thomas J. Whipple, Laconia.
Carroll,	W. H. H. Mason, Moultonborough.
Cheshire,	Sampson W. Buffam, Winchester.
Coos,	Nathan R. Perkins, Jefferson.
Hillsborough,	James O. Adams, Manchester.
Grafton,	Luther B. Hoskins, Lyman.
Rockingham,	Joseph F. Lawrence, Epping.
Strafford,	Charles Jones, Milton.
Sullivan,	Edward H. Brown, Croydon.
	MOSES HUMPHREY, President.
	JAMES O. ADAMS, Secretary.

May 1, 1871—May 1, 1873.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	Thomas Cogswell, Gilmanton.
Carroll,	W. H. H. Mason, Moultonborough.
Cheshire,	Sampson W. Buffam, Winchester.
Coos,	Nathan R. Perkins, Jefferson.
Hillsborough,	James O. Adams, Manchester.
Grafton,	Luther B. Hoskins, Lyman.
Rockingham,	Joseph F. Lawrence, Epping.
Strafford,	Hiram R. Roberts, Rollinsford.
Sullivan,	John S. Walker, Claremont.
	MOSES HUMPHREY, President.
	JAMES O. ADAMS, Secretary.

May 1, 1873—June 8, 1875.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	Jeremiah W. Sanborn, Gilmanton.
Carroll,	W. H. H. Mason, Moultonborough.
Cheshire,	Sampson W. Buffam, Winchester.
Coos,	Horace F. Holton, Lancaster.
Hillsborough,	Benjamin F. Hutchinson, Milford.
Grafton,	Charles F. Kingsbury, Lyme.
Rockingham,	Joseph F. Lawrence, Epping.
Strafford,	Hiram R. Roberts, Rollinsford.
Sullivan,	Edmund Burke, Newport.

MOSES HUMPHREY, President.

JAMES O. ADAMS, Secretary.

June, 1875—June, 1876.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	Jeremiah W. Sanborn, Gilmanton.
Carroll,	W. H. H. Mason, Moultonborough.
Cheshire,	Sampson W. Buffam, Winchester.
Coos,	Horace F. Holton, Lancaster.
Hillsborough,	Benjamin F. Hutchinson, Milford.
Grafton,	Charles F. Kingsbury, Lyme.
Rockingham,	John M. Weare, Seabrook.
Strafford,	Joshua B. Smith, Durham.
Sullivan,	Hiram Parker, Lempster.

MOSES HUMPHREY, President.

JAMES O. ADAMS, Secretary.

June, 1876—June, 1877.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	Jeremiah W. Sanborn, Gilmanton.
Carroll,	Samuel B. Shackford, Conway.

Cheshire,	George K. Harvey, Surry.
Coos,	Barton G. Towne, Lancaster.
Hillsborough,	Benjamin F. Hutchinson, Milford.
Grafton,	Charles F. Kingsbury, Lyme.
Rockingham,	John M. Weare, Seabrook.
Strafford,	Joshua B. Smith, Durham.
Sullivan,	Hiram Parker, Lempster.
	MOSES HUMPHREY, President.
	JAMES O. ADAMS, Secretary.

June, 1877—June, 1879.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	Jeremiah W. Sanborn, Gilmanton.
Carroll,	Samuel B. Shackford, Conway.
Cheshire,	George K. Harvey, Surry.
Coos,	Barton G. Towne, Lancaster.
Hillsborough,	Benjamin F. Hutchinson, Milford.
Grafton,	Charles F. Kingsbury, Lyme.
Rockingham,	William H. Hills, Plaistow.
Strafford,	Albert DeMerritt, Durham.
Sullivan,	Hiram Parker, Lempster.
	MOSES HUMPHREY, President.
	JAMES O. ADAMS, Secretary.

June, 1879—May, 1880.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	Jeremiah W. Sanborn, Gilmanton.
Carroll,	W. H. H. Mason, Moultonborough.
Cheshire,	George K. Harvey, Surry.
Coos,	Barton G. Towne, Lancaster.
Hillsborough,	David H. Goodell, Antrim.
Grafton,	Charles M. Tuttle, Littleton.
Rockingham,	William H. Hills, Plaistow.
Strafford,	Albert DeMerritt, Durham.
Sullivan,	Hiram Parker, Lempster.
	MOSES HUMPHREY, President.
	JAMES O. ADAMS, Secretary.

May, 1880—May, 1882.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	Jeremiah W. Sanborn, Gilmanton.
Carroll,	W. H. H. Mason, Moultonborough.
Cheshire,	George K. Harvey, Surry.
Coos,	Sidney B. Whittemore, Colebrook.
Hillsborough,	David H. Goodell, Antrim.
Grafton,	Charles M. Tuttle, Littleton.
Rockingham,	William H. Hills, Plaistow.
Strafford,	Albert DeMerritt, Durham.
Sullivan,	Hiram Parker, Lempster.

MOSES HUMPHREY, President.

JAMES O. ADAMS, Secretary.

May, 1882—June, 1885.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	Charles W. Hackett, Belmont.
Carroll,	W. H. H. Mason, Moultonborough.
Cheshire,	George K. Harvey, Surry.
Coos,	Sidney B. Whittemore, Colebrook.
Hillsborough,	David H. Goodell, Antrim.
Grafton,	John E. Carr, Haverhill.
Rockingham,	William H. Hills, Plaistow.
Strafford,	Albert DeMerritt, Durham.
Sullivan,	Hiram Parker, Lempster.

MOSES HUMPHREY, President.

JAMES O. ADAMS, Secretary.

June, 1885—June, 1886.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	George S. Philbrick, Tilton.
Carroll,	W. H. H. Mason, Moultonborough.

LIST OF MEMBERS.

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Cheshire,	George K. Harvey, Surry.
Coos,	Sidney B. Whittemore, Colebrook.
Hillsborough,	David H. Goodell, Antrim.
Grafton,	John E. Carr, Haverhill.
Rockingham,	John D. Lyman, Exeter.
Strafford,	Albert DeMerritt, Durham.
Sullivan,	Hiram Parker, Lempster.
	MOSES HUMPHREY, President.
	JAMES O. ADAMS, Secretary.

June, 1886—May, 1888.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	George S. Philbrick, Tilton.
Carroll,	W. H. H. Mason, Moultonborough.
Cheshire,	Jason S. Perry, Rindge.
Coos,	Sidney B. Whittemore, Colebrook.
Hillsborough,	Joseph Farnum, Peterborough.
Grafton,	John E. Carr, Haverhill.
Rockingham,	John D. Lyman, Exeter.
Strafford,	Lucien Thompson, Durham.
Sullivan,	Charles McDaniel, Springfield.
	MOSES HUMPHREY, President.
	NAHUM J. BACHELDER, Secretary.

May, 1888—December, 1890.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	George S. Philbrick, Tilton.
Carroll,	Alonzo Towle, Freedom.
Cheshire,	Jason S. Perry, Rindge.
Coos,	Freeman D. Covell, Colebrook.
Hillsborough,	George A. Wason, New Boston.
Grafton,	Charles E. Swanzey, Bethlehem.
Rockingham,	John D. Lyman, Exeter.
Strafford,	Lucien Thompson, Durham.
Sullivan,	Charles McDaniel, Springfield.
	MOSES HUMPHREY, President.
	NAHUM J. BACHELDER, Secretary.

NEW HAMPSHIRE AGRICULTURE.

December, 1890—November, 1891.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	George S. Philbrick, Tilton.
Carroll,	Alonzo Towle, Freedom.
Cheshire,	Jason S. Perry, Rindge.
Coos,	Freeman D. Covell, Colebrook.
Hillsborough,	George A. Wason, New Boston.
Grafton,	George W. Mann, Benton.
Rockingham,	John D. Lyman, Exeter.
Strafford,	Lucien Thompson, Durham.
Sullivan,	Charles McDaniel, Springfield.
	MOSES HUMPHREY, President.
	NAHUM J. BACHELDER, Secretary.

November, 1891—November, 1892.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	George S. Philbrick, Tilton.
Carroll,	Alonzo Towle, Freedom.
Cheshire,	Jason S. Perry, Rindge.
Coos,	Osgood F. Covell, Colebrook.
Hillsborough,	Joseph A. Hall, Brookline.
Grafton,	George W. Mann, Benton.
Rockingham,	John D. Lyman, Exeter.
Strafford,	James M. Hayes, Dover.
Sullivan,	Bela Graves, Unity.
	MOSES HUMPHREY, President.
	NAHUM J. BACHELDER, Secretary.

November, 1892—November, 1893.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	George S. Philbrick, Tilton.
Carroll,	Alonzo Towle, Freedom.

Cheshire,	Jason S. Perry, Rindge.
Coos,	Joseph D. Howe, Lancaster.
Hillsborough,	Joseph A. Hall, Brookline.
Grafton,	George W. Mann, Benton.
Rockingham,	John D. Lyman, Exeter.
Strafford,	James M. Hayes, Dover.
Sullivan,	Bela Graves, Unity.
	MOSES HUMPHREY, President.
	NAHUM J. BACHELDER, Secretary.

November, 1893—November, 1894.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	George H. Wadleigh, Tilton.
Carroll,	Alonzo Towle, Freedom.
Cheshire,	Jason S. Perry, Rindge.
Coos,	Joseph D. Howe, Lancaster.
Hillsborough,	Joseph A. Hall, Brookline.
Grafton,	George W. Mann, Benton.
Rockingham,	John D. Lyman, Exeter.
Strafford,	James M. Hayes, Dover.
Sullivan,	Bela Graves, Unity.
	MOSES HUMPHREY, President.
	NAHUM J. BACHELDER, Secretary.

November, 1894—November, 1896.

County.	Member.
Merrimack,	Moses Humphrey, Concord.
Belknap,	George H. Wadleigh, Tilton.
Carroll,	Alonzo Towle, Freedom.
Cheshire,	Willard Bill, Jr., Westmoreland.
Coos,	Lauren J. Miner, Whitefield.
Hillsborough,	Joseph A. Hall, Brookline.
Grafton,	George W. Mann, Benton.
Rockingham,	John D. Lyman, Exeter.
Strafford,	James M. Hayes, Dover.
Sullivan,	William H. Sisson, Cornish.
	MOSES HUMPHREY, President.
	NAHUM J. BACHELDER, Secretary.

November, 1896—October, 1898.

County.	Member.
Merrimack,	Joseph B. Walker, Concord.
Belknap,	George H. Wadleigh, Tilton.
Carroll,	Charles B. Hoyt, Sandwich.
Cheshire,	Willard Bill, Jr., Westmoreland.
Coos,	Lauren J. Miner, Whitefield.
Hillsborough,	Herbert O. Hadley, Temple.
Grafton,	Edward E. Bishop, Bethlehem.
Rockingham,	John D. Lyman, Exeter.
Strafford,	Joseph D. Roberts, Rollinsford.
Sullivan,	William H. Sisson, Cornish.
	JOSEPH B. WALKER, President.
	NAHUM J. BACHELDER, Secretary.

October, 1898—January, 1891.

County.	Member.
Merrimack,	Joseph B. Walker, Concord.
Belknap,	George H. Wadleigh, Tilton.
Carroll,	Charles B. Hoyt, Sandwich.
Cheshire,	Willard Bill, Jr., Westmoreland.
Coos,	Charles E. King, Whitefield.
Hillsborough,	Herbert O. Hadley, Temple.
Grafton,	Edward E. Bishop, Bethlehem.
Rockingham,	John D. Lyman, Exeter.
Strafford,	Joseph D. Roberts, Rollinsford.
Sullivan,	Daniel C. Westgate, Plainfield.
	JOSEPH B. WALKER, President.
	NAHUM J. BACHELDER, Secretary.

January, 1901—January, 1903.

County.	Member.
Merrimack,	Joseph B. Walker, Concord.
Belknap,	George H. Wadleigh, Tilton.
Carroll,	Charles B. Hoyt, Sandwich.

LIST OF MEMBERS.

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Cheshire,	Thaddeus W. Barker, Nelson.
Coos,	Charles E. King, Whitefield.
Hillsborough,	Herbert O. Hadley, Temple.
Grafton,	Edward E. Bishop, Bethlehem.
Rockingham,	John D. Lyman, Exeter.
Strafford,	Joseph D. Roberts, Rollinsford.
Sullivan,	Daniel C. Westgate, Plainfield.

JOSEPH B. WALKER, President.

NAHUM J. BACHELDER, Secretary.

January, 1903—January, 1905.

County.	Member.
Merrimack,	Joseph B. Walker, Concord.
Belknap,	George H. Wadleigh, Tilton.
Carroll,	Charles B. Hoyt, Sandwich.
Cheshire,	Thaddeus W. Barker, Nelson.
Coos,	Charles E. King, Whitefield.
Hillsborough,	Herbert O. Hadley, Temple.
Grafton,	Edward E. Bishop, Bethlehem.
Rockingham,	Alden F. Sanborn, Fremont.
Strafford,	Joseph D. Roberts, Rollinsford.
Sullivan,	Daniel C. Westgate, Plainfield.
	JOSEPH B. WALKER, President.
	NAHUM J. BACHELDER, Secretary.

GENERAL REPORT.

STATE OF NEW HAMPSHIRE.

BOARD OF AGRICULTURE,

CONCORD January 1, 1905.

To His Excellency the Governor and the Honorable Council:

The report of the State Board of Agriculture from January 1, 1903, to January 1, 1905, is herewith submitted:

AGRICULTURAL SOCIETIES.

The agricultural societies of the state consist of the Granite State Dairymen's Association and the New Hampshire Horticultural Society receiving financial aid from the state, the Concord State Fair Association, eight county and district fair associations, about sixty local fair associations, several poultry associations and the Grange with its State, Pomona and subordinate branches. While the Board of Agriculture has no direct authority over these societies and organizations, it is authorized by law to "encourage the formation of farmers' clubs and agricultural and horticultural societies," which has been done as occasion offered. Especially has effort been made to foster and encourage those agricultural societies already in existence.

We recognize the advantage to be gained in any line of agriculture by co-operative effort by those engaged therein and recommend the formation of special societies by those engaged in special lines. In addition to those already named there should be market gardeners, bee keepers,

maple sugar makers, wool growers, forestry, stock breeders' and horse breeders' associations. Such associations might be made valuable in discussing new developments and in securing the adoption of advanced methods in the various agricultural pursuits represented. The limited extent of such special agricultural industries in New Hampshire compared with their extent in states of greater agricultural resources should constitute no barrier to their existence here. In this age of organization when the people engaged in special lines of other industries are thoroughly organized for their advancement, however limited may be their operations, there should be no neglect of this matter on the part of the farmers in every field of operation. Such action is in accord with the policy and instruction of the Board of Agriculture, and will receive its encouragement and support.

FARMERS INSTITUTES.

A prominent feature of the work of the Board of Agriculture is the holding of farmers' institutes for the dissemination of knowledge in regard to up-to-date methods and for stimulating an increased interest among the farmers in their work. So far as the former of these objects is concerned it is but one of the special educational agencies supported by the state for diffusing knowledge of a special nature, and so far as the latter is concerned it is a recognition on the part of the state of the basic nature and fundamental importance of the welfare of agriculture to the welfare of the state. Whatever contributes to the welfare of the people engaged in agriculture contributes to the welfare of all the people. It is upon this basis alone that states, and the United States, appropriate money and inaugurate movements in the interest of this industry as is done in the interest of no other industry.

It is pleasing to note the increased interest manifested

by the rural people in farmers' institutes. In localities where but a few years ago it was impossible to secure the attendance of but a limited number of people there is now an attendance testing the capacity of the largest halls, and the interest in the exercises and enthusiastic manner in which institute workers are received is abundant evidence of the recognition of the people of the usefulness and value of farmers' institutes. While members of the Board of Agriculture have contributed in a large degree to institute work, dependence is made more than ever before upon trained specialists. These are to be found among the officials of agricultural colleges and experiment stations, and among those who have made a life study of special agricultural matters. We have also made available the experience of practical farmers who have worked out special problems in the garden, orchard, dairy, or stable. We have had much assistance from the president and instructors in the New Hampshire Agricultural College in this work, and from the officers of the New Hampshire State Grange, who have co-operated with us in every possible way to promote the efficiency of farmers' institutes. The attendance at the institutes held during the two years has varied from a few hundred to a thousand, and the holding of an institute in any locality invariably results in a request for a second institute. Several addresses delivered at institutes will be found in this volume. The institutes held have been as follows:

1903.

Pittsburg	.	.	.	.	.	December 8
Whitefield	.	.	.	.	.	December 9
Leighton's Corner	.	.	.	.	.	December 22
North Chatham	.	.	.	.	.	December 23

1904.

East Rochester	.	.	.	.	.	January 5
Dover	.	.	.	.	.	January 6

Londonderry	January 11
Peterborough	January 26
Hudson	January 27
Sanbornton	February 4
Goshen	February 11
Grantham	February 12
Franklin Falls	February 16
Contoocook	February 17
Ashland	February 22
Epping	March 1
Meredith Centre	March 16
George's Mills	October 13
Milton	November 1
Lee	November 2
Centre Sandwich	November 3
Hollis	November 29
North Weare	November 30
Sutton	December 13
Danbury	December 14
Hinsdale	December 27
Jaffrey	December 28

PUBLIC MEETINGS.

Public meetings in addition to the institutes have been held in connection with the Granite State Dairymens' Association at Keene in December 1903, and at Laconia in December, 1904. Field meetings were held in connection with East Rockingham Pomona Grange at Hampton Beach in July, 1903, and in connection with Northern New Hampshire Pomona Grange at Bethlehem in July, 1904. These meetings were liberally attended and the exercises were given marked attention.

OLD HOME WEEK.

The Board of Agriculture has taken an active interest in the success of Old Home Week since the inauguration

of the movement in 1899, believing it to be of tremendous advantage to the rural sections of the state. We have undertaken to promote the formation of local associations, to advise in the arrangement of exercises, to assist in securing speakers, to give publicity to dates and location of meetings and have compiled and published, in condensed form, a complete report of all the Old Home Week meetings held in the state. The report of those held in 1903 and 1904 will be found in this volume. Such records are not only helpful in arranging meetings in succeeding years, but preserve in permanent form a complete history of the movement. The expense on the part of the Board of Agriculture has been but trifling, amounting to less than \$300 in the two years, and was for printing, postage and clerical work. About 100 Old Home Week meetings were held in the state during each of the years 1903 and 1904, resulting in strengthening the attachment to the old farm home among thousands of absent sons and daughters, and in some instances securing its re-occupation by them. A lasting benefit will be noted in future years through the influence and teachings of these unique gatherings.

CONTAGIOUS DISEASES OF ANIMALS.

The provisions of the Public Statutes make the secretary of the Board of Agriculture a member of the Cattle Commission, and so closely is this work allied to the duties of the board its report is incorporated in this volume. The policy pursued by the Cattle Commission in previous years has been continued during the period for which this report is made, as being the most practical and economical of any that could be devised under the law. During the years 1903 and 1904 we have inspected 717 stables, and condemned and destroyed 659 tuberculous cattle and 51 glandered horses. A detailed statement will be found in this report under the head of Cattle Commission.

FERTILIZER INSPECTION.

In accordance with the provisions of the statutes the Board of Agriculture has exercised supervision over the sale of commercial fertilizers in the state. No commercial fertilizers are legally sold in the state unless the manufacturer has procured a license of the secretary of the State Board of Agriculture. The granting of applications for license is based upon the analysis of goods of the manufacturer applying for a license. In April or May of each year an agent of the board is sent into at least two towns in each county with instructions to draw from the stock of dealers a sample of each brand offered for sale, and this inspection is continued until at least one sample of each brand of all companies applying for a license is obtained. The samples thus obtained are sealed and sent to the New Hampshire Experiment Station at Durham, where analyses are made. In 1903 the goods of 12 manufacturers, composed of 99 brands, were sampled in the above manner, and in 1904 the number of manufacturers was 11, and the number of brands 127. The result of this inspection and the analyses will be found in this report.

FEEDING STUFF INSPECTION.

The legislature of 1901 enacted a law requiring an inspection of feeding stuffs sold in the state, by the Board of Agriculture, the secretary of which was authorized to issue licenses for the sale of goods in the state to persons complying with the requirements of the law. The expense of the inspection and supervision is met by a license fee paid by the persons to whom licenses are issued, one fee covering whatever number of brands the licensee offers for sale. An agent of the board canvassed the state drawing samples for analysis from goods in the market, which samples were sent under seal to the New Hampshire Experiment Station where analyses were made. The result

of the analyses made and their comparison with the guaranteed composition of the goods by the manufacturer, or dealer, is the authority of the secretary in granting licenses and making prosecutions for violation of the law. In 1903 twenty licenses were issued covering 46 brands of goods, and in 1904 twenty-four licenses were issued covering 59 brands of goods. A detailed statement of the work, under this law, will be found in this report.

NURSERY INSPECTION.

The legislature of 1903 provided for the appointment of a nursery inspector by the Board of Agriculture for preventing the introduction into the state of diseased nursery stock and for the suppression of diseases and pests that had already appeared upon the trees in certain sections. A skilled entomologist was appointed and under his direction much work contemplated in the act has been accomplished. Under the law the nursery inspector receives no compensation for services, but is allowed to expend not exceeding \$300 annually in the prosecution of the work. Sufficient time has not yet elapsed to enable us to make a detailed statement of results, but the results obtained in other states where similar action has been taken for a longer period justify us in the prediction that the movement will prove a valuable one.

RURAL DEVELOPMENT.

In 1889 the Board of Agriculture was authorized by law to inaugurate and put into effect methods for calling attention to the opportunities for people to locate in the rural sections of the state, generally known as the "abandoned farm" movement. So far as we know, this was the first attempt in the eastern part of the country to advertise cheap lands at the expense of a state. This movement was looked upon with suspicion by many people at that time because it called wide-spread attention to what was

considered a recognition of retrograde in agricultural communities. There were thousands of vacant farm houses, scores in some towns, by the exodus of young people to centers of wealth and population from various causes of discontent. Many of these were commodious structures in fair state of preservation, located upon farms of good natural resources. The evolution through which agriculture was then passing, and the discontent above referred to, were responsible for this condition of affairs. It was a condition that had to be recognized, and even publicized, before any adequate remedy could be applied, and the story of abandoned farms was heralded far and wide.

We have no specific date from which to compile a report of the actual results of this effort, but from the information at hand we are justified in stating that three-fourths of those vacant houses have become the homes of people during the entire year or during the summer months. As a result of this movement more than 2,000 summer homes have been established in the state, and more than \$5,000,000 have been invested in improvement of abandoned farms and in the erection of new summer homes. Over 20,000 people annually spend a portion of, or all, the summer months in those homes, contributing immensely to the activity and prosperity of the state. Those people include some of the most famous authors, statesmen, diplomats, jurists, financiers, sculptors, and philanthropists that the country contains. Those purchasing and occupying these places for farming purposes include successful orchardists, dairymen, poultry keepers, stock breeders, and scientific farmers adopting progressive methods and reaping satisfactory rewards. No movement inaugurated in recent years for the advancement of the interests of rural sections has produced more gratifying results than this abandoned farm movement in New Hampshire. This has been accomplished through judicious advertising of the resources of the state and their adaptability to a life of health, pleasure and profit.

The end is not yet, for with vigorous and well directed effort along similar lines in the future, marvelous development can still be made in the same direction, adding immeasurably to the social condition and financial prosperity of rural New Hampshire, and to the general welfare of the state at large. This subject will claim the prominent attention of the board in the future as it offers greater possibilities than any other subject for the development of New Hampshire. Its promotion will contribute much to agricultural prosperity by attracting capital for the development of farming lands and by improving the market for farm products through the increased local demand created by the presence of summer people.

FINANCIAL.

The members of the Board of Agriculture receive no compensation for services as members but receive actual expenses. The expenses in the various departments, except salary of secretary and printing, which are fixed by law and over which the board has no jurisdiction, have been as follows:

1903.

DR.

General expenses	\$183.27
Feeding stuff inspection	378.49
Fertilizer inspection	923.48
Expenses of institutes	136.29
Winter meeting and field meeting	282.19
Nursery inspection	288.41

 \$2,192.13

CR.

By cash paid state treasurer:

License fees, fertilizers	\$1,740.00
License fees, feeding stuffs	460.00

 \$2,200.00

1904.

DR.

General expenses	\$286.81
Fertilizer inspection	1,106.33
Expenses of institutes	792.92
Winter meeting and field meeting	405.07
Nursery inspection	155.05
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	\$2,746.18

CR.

By cash paid state treasurer:

License fees, fertilizers	\$1,500.00
License fees, feeding stuffs	460.00
	<hr/>
	\$1,960.00

IMMIGRATION ACCOUNT.

1903.

Clerical and postage expenses	\$710.00
Old Home Week expense	160.97
	<hr/>
	\$870.97

1904.

Clerical and postage expenses	\$617.94
Old Home Week expense	118.60
	<hr/>
	\$736.54

An itemized exhibit of the foregoing expenditures has been approved by the auditing committee of the governor and council and vouchers for all items are on file in the office of the Board of Agriculture.

By order of the Board of Agriculture,

N. J. BACHELDER, Secretary.

ADDRESSES
AT
INSTITUTES AND MEETINGS.

*NEW HAMPSHIRE AGRICULTURE.

BY J. B. WALKER.

A few weeks ago, while passing over the divide between the waters of the Merrimack and Connecticut rivers, I found in the office of the hotel where I passed the night, a copy of Mr. Roswell C. Smith's School geography, published in 1839. Mr. Smith therein tells the reader that "New Hampshire is a cold and mountainous but a healthy and productive state," and that "It abounds in lakes, mountains and delightful scenery." In those twenty-one words he has expressed its leading characteristics; of salubrity, climate, topography and productiveness of soil.

SOIL PRODUCTS.

The soil products of New Hampshire are of two-fold character, consisting of: —

1st. Sylvicultural or Forest Products.

2nd. Agricultural or Field Products.

Such they have ever been and such they must ever continue to be. The Creator has moulded a part of the state's surface into rock-bearing ridges and mountains which scorn the plow and defy all practicable attempts at cultivation. Nearly or quite one-half of it is of this description, and, except in the character of its inhabitants, is as wild to-day as when the first settlement of white men was established upon its coast. The other half he has moulded into plains, for the most part, of strong soils which, like the sensible maiden worth striving for, accords scant encouragement to all half-hearted efforts to obtain its favors.

Both the mountains and the plains have abundant gifts at their disposal. To obtain these, requires brains, muscle and devotion, and, whether one does or does not accept in

*Delivered at Bethlehem, July 27, 1904.

his religion the usual doctrine of the trinity, he must acknowledge that a trinity of brains, muscle, and devotion are unavoidable conditions of fair success in forestry and in farming.

ADAPTATION OF CROPS TO SOIL AND CLIMATE.

Success under such conditions also requires a careful adaption of crops to local environments. The latter are fixed and but little, if anything, can be done to change them. White pine trees wont grow at altitudes of three thousand feet above the level of the sea, and Indian corn will not flourish on cold, wet ground.

When, some years ago, a father complained to the old, village shoemaker that the boots made for his little son did not fit, the knight of the last replied that the fault was not in the boots, but in the boy's little, "fussy feet," which were too small to fill them. That claim failed of acceptance by the customer, who thereafter transferred his patronage to another shop whose proprietor recognized the fact that, the boot should be constructed to fit the foot, whose shape had been fixed by nature, rather than that the foot should be vainly left to shape itself to the boot. In a word, nature resents interference with her established laws and imposes pecuniary loss upon all who attempt it.

The present surface condition of New Hampshire, as I understand it, is about this: we have some three millions of acres in forest, about one million (less rather than more) in tillage, one and a quarter million in pasturage, and enough more in water surfaces, town sites, highways and bare mountain summits to make up its entire area of about five and three-quarters millions acres. It may not be unprofitable to consider our present management of the three first mentioned, and see if it is in accordance with the established rules which Omnipotence has established for the attainment of highest success.

FOREST TREATMENT.

Inasmuch as one-half, and indeed more, of our land is under forest cover, and must, from its nature, ever continue to be, its future treatment is a matter of very great importance, particularly in sections whose wealth must always largely consist of its wood and timber.

Heretofore, and even now, the management of this great interest has generally been reckless, unsystematic, wasteful, and with slight, if any, regard to its future welfare. Immediate wants and immediate profits only have been considered. With these in view, the farmer has cut or sold his wood and timber, and in the latter case, the lumberman has felt that, having put his money into a given purchase, he should get it out as soon as he can and with as much profit as he can.

To this general remark, however, there are sporadic exceptions, where ripe timber only is cut, the immature being left standing until it has become fit for the axe. Happily, I am glad to say, this practice is becoming more and more in vogue with large operators.

PRESENT CONDITION OF FORESTS.

As a result of this careless harvesting, our woods consist to-day, with the exception of very limited areas of virgin forest, in the upper part of the state, of a miscellaneous variety of trees differing in size all the way from those of largest growths down to the sprouts which have lives of a single year. When removed they are found to yield a very much smaller proportion of timber and larger proportion of mere wood than they would have done under wise treatment. In short, the average yield per acre of timber on many sections has been found to be less than five thousand feet board measure, which by proper culture might have been four or five times that amount.

Should our present methods of forest management continue, the time is near at hand when, notwithstanding nature's kindly efforts, lumbering will become for a time a suspended industry, and our builders will have to look, as to some extent they already do, for their timber, boards, clapboards and shingles to forests outside the state. In that case, we shall repeat the mistake made by older countries abroad, but with this unenviable difference: they made it in their ignorance; we are doing it against intelligent warnings and with our eyes wide open.

I am not posing here as a sentimentalist, opposed to the timely removal of our forest products; nor as a pessimist, believing that the unwise administration of this species of property is to always continue, but as the advocate of one more profitable which will sooner or later be adopted here, as it has been elsewhere, I hold, and let us see if you do not all agree with me:

- I. That we should regard the money we have invested in wooded property as fixed capital, as much so as that of a bank or railroad or manufacturing plant, and that it should be kept unimpaired.
- II. That its increment only should be removed, just as the United States bondholder cuts off his coupons, not as in his case, every three months; but as it matures under existing conditions of climate and soil.
- III. That its management be such as to secure the rapid production of maximum proportions of timber to the least amounts of mere wood, for the reason that timber is of more value than wood.
- IV. That our wood products, as far as practicable, should be prepared for their ultimate uses before removal from the state, and, so far as practicable, in proximity to the localities in which they grew, thereby retaining here the increased value given them by manufacture. The importance of this course was made plain some years ago, when it was found that a cord of white pine

wood, worth four dollars and seventy-five cents at the mill, had been increased, by conversion to mackerel kits, to twenty-five dollars and twenty cents, and that one thousand feet, board measure, of maple plank, delivered at the New Hampshire State Prison, worth twenty dollars, had been increased in value to seventy-five dollars and sixty cents by conversion into bedsteads. By their manufacture, the initial value of the wood had been more than quintupled and that of the plank more than trebled. Indeed, it goes without saying that, so far as our forest products are concerned, there is a greater profit in their conversion to ultimate uses than in their production.

- V. It is patent to any one conversant with the topography of our state that, the manufacture of a very large proportion of our forest products might be carried on within its limits. Undulations prevail in all parts of it and secure hundreds of available water powers which may be utilized where found or transferred by wire to localities more convenient. Should these be used as suggested, many an old village would be revived and enlarged, many a new one spring up, new industries be introduced, our wealth be increased and we should soon recognize the value of these but partially developed resources.

AGRICULTURE.

We turn here from its sylvaculture to a brief look at the State's agriculture.

The United States census of 1890 states that, our farms numbered twenty-nine thousand three hundred and twenty-four (29,324), against thirty-two thousand one hundred and eighty-one (32,181) in 1880, having decreased in twenty years at an average rate of one hundred and forty-two a year. This decrease was due in part to

an abandonment of some which poor management had made unremunerative, to the death or removal of the occupants of some, and now and then, to a consolidation of several small farms into larger ones.

If we compare some of our recent leading crops with those raised forty years ago, we shall find that they have increased but little while many have diminished greatly.

For instance, in 1859, our hay crop, our great underlying crop, was 642,741 tons while that of 1899 was but 654,963 tons, a meagre increase of but three hundred and fifty pounds a year. This was raised the latter year on 615,042 acres, the yield per acre being 1.06 tons. As compared with our sister New England states, we rank fifth as successful hay producers; Massachusetts raising 1.41 tons per acre, Vermont, 1.32, Connecticut, 1.13, Rhode Island, 1.10, New Hampshire, 1.06, and Maine 80-100 of 1. While none of these are yields of which to boast, Maine and New Hampshire are accorded the greatest opportunities of increasing theirs.

During the last forty years our corn crop has fallen from an annual yield of 1,414,628 bushels to 1,080,720, a decline of sixteen per cent. Rhode Island, now producing 35 bushels per acre, Maine, New Hampshire and Vermont each 38, Massachusetts 39, and Connecticut 40.

This showing, however, compares well with that of the great corn states of Ohio, Indiana, Illinois and Iowa, which respectively produced 39, 39, 37 and 39 bushels per acre, and still better with that of the states of Georgia, Alabama, Mississippi and Arkansas yielding but 9, 12, 17 and 10 each.

It is quite apparent to any intelligent observer that we can easily increase our present yield of this crop and double its acreage. That we ought to do so goes without saying; inasmuch as we can raise our supply of this grain cheaper than we can buy it, and that it is not good business to pay more for it abroad than it costs to raise it at home.

Forty-five years ago we raised 1,329,213 bushels of oats a year. By the United States census of 1900 we were producing 497,110. Forty-five years ago we raised 4,137,543 bushels of potatoes. In 1900 the yield had fallen to 2,420,568, nearly fifty per cent.

Such figures do not afford an interesting recital to an agricultural audience like this, and it may be well to present no more of them, further than to say that, statistics show like declines in several varieties of our farm stock. In 1860 our horses numbered 41,101, and in 1900 only 22,367. Between these two dates the number of our sheep had declined from 310,534 to 65,318; our oxen from 51,512 to 5,567, and the whole number of our cattle from 264,447 to 155,294.

But while wincing at these unpleasant facts, we get comfort in remembering that the decline in our corn crop is partially made good by our comparatively new product of ensilage; that there has been a great increase of our dairy products, valued in 1900 at \$5,591,272, and that while in 1890 the total value of our farm products was \$13,761,050, in 1900 it had risen to \$21,929,988 — an increase of 59 per cent.

Yet, were we to make a careful survey of the state, we should be likely to infer that there are agricultural sinners in every one of its towns, except Bethlehem; that as farmers we are living, more or less of us, "at a poor dying rate," and in great need of an agricultural revival. Our sins, however, are sins of omission quite as much as positive sins of commission. We have not risen to a clear apprehension of all our opportunities or to a full development of our resources.

IRRIGATION.

In confirmation in part of this statement, I may say that, by a judicious treatment of our forests, they would become reservoirs which would render the flow of our streams

perennial and make irrigation easily possible and profitable. Thus far, the New Hampshire farmer has manifested but little interest in this agricultural aid, and any person saying much about it has been regarded as a book-farmer, who knows too many things that he is not quite sure about.

Nevertheless, irrigation is no new practice. It is as old, certainly, as the Pharaohs and Nebuchadnezzar. But for it, the valley of the Nile and the fertile plains of Mesopotamia would in their times have been but arid wastes. To-day, in Northern Italy, a section of territory half as large as this state is made productive by the spread upon a soil by no means rich of a portion of the drainage of the southern watershed of the Alps. For six hundred years this has been done, the various intricate questions it has raised have been judiciously settled and this country has now one of the best systems of irrigation law to be found in the world. In many of the older countries abroad, irrigation is essential to agricultural success and is as common almost as plowing; lengthening the growing season, increasing the assimilability of the soil's plant food and securing immunity from drought.

It is a gratifying fact that irrigation has come to this country, and, I doubt not, to stay. The "Great American Desert" which some of us saw on the maps of our school geographies, is fast being changed by this agency, from a barren waste to fertile fields. We learn from the last United States census, that already within the eleven states and territories of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming, no less than 7,263,273 acres have been rendered productive by irrigation, and that it has already made its appearance in Maine, Massachusetts and Connecticut where it has spread over more than six hundred acres (622). Indeed, for forty years, the father of Prof. J. W. Sanborn, and later, the Professor himself,

have been practising it on their extensive farm in Gilman-ton. That it has come to remain seems sure. That many an enterprising New Hampshire farmer is so situated that he may avail himself of its benefits, is equally certain.

It was stated some years ago, apparently upon good authority, that the rental of the irrigated lands of Lombardy and Piedmont had been increased by seasonable supplies of moisture some four million dollars (\$4,150,000), and, it is a fact beyond dispute that, the quality of some of our barren lands beyond the Mississippi has been converted thereby from sterility to high fertility.

DRAINAGE

But we have in this state another natural resource in large areas of land which are unproductive, not by the want of moisture, but by an excess of it. These are of all sizes from a few to hundreds of acres. They are to be found all over the state and at all elevations from that of the sea level to three thousand feet or more above it. They have been made rich in vegetable and mineral matter by centuries of fertile washings from adjoining elevations. In the absence of accurate statistics, we know not their aggregate area, but it is very extensive, the ancient town of Hampton alone having some two thousand acres of such land.

A few of these, upon being drained, have been found very productive and particularly adapted to the growth of hay, the great underlying crop of our farming. Most of them, however, have been, as yet, but slightly if at all improved, and less, seemingly, is now heard of under-drainage than forty years ago. By their proper drainage and cultivation we could easily double our grass crop — a fact of vast importance to such of us as have such lands of greater or less extent on our respective farms.

NEW HAMPSHIRE SCENERY.

While our scenery — our mountains, lakes, streams, and wooded surfaces — is not, strictly speaking, an agricultural resource, it is strongly akin to it, creating by those who come to enjoy it a demand for large quantities of our home products.

Such is our centrality of position that, ten million persons, more rather than less, can take a seasonable breakfast in their respective homes, many indeed their dinners, and afterwards, on the same day, be transported to the summit of Mount Washington in time for tea and sunset. The Old Man of the Mountain, just over in Franconia, draws more people to New Hampshire than does the fame of John Stark, Daniel Webster, Lewis Cass, Franklin Pierce,— indeed, more than that of all the great men combined whom our state has heretofore produced.

That this resource is also to be a permanent one seems assured. The number of visitors and summer residents has been increasing year by year ever since President Dwight, of Yale College, made his first visit to the White Mountains more than a hundred years ago, in 1797, and found entertainment at the little pioneer inn of Eleazer Roesbrook, near the Giant's Grave, since succeeded by Fabyans, The Mount Pleasant and the Mount Washington hotels.

The Creator has placed our mountains here to stay. They are too heavy to remove elsewhere, and so long as they and our crystal streams and pure air remain with us, tourists and visitors will come here in great numbers.

Moreover, many of these are buying houses and lands and becoming permanent summer residents. Indeed, our summer population largely exceeds that of the other seasons.

I need not again suggest that this great annual influx of temporary residents are consumers of many of the farm

products suited to our soil and climate. If they will, instead of allowing these to be largely imported from abroad, the farmers of New Hampshire can raise and supply them at a profit. If they have too long neglected this opportunity, it is not yet too late to avail themselves of it. Our pastures produce the finest of beef, mutton and milk: our creameries, domestic and corporate, send forth the sweetest of butter; and in our fields and gardens are raised grains and vegetables unsurpassed. To increase these to present demands is easy. To do so is to enhance the importance of our agricultural interest. Not to do so is to live below the level of our opportunities. But I am not here to preach, but simply to state important facts. Their application is left to you.

SUMMARY.

In short, what I have endeavored to say is that, our land products are of two kinds: those of the woods and those of the fields.

1. To the product of the first, we have as yet given but slight attention. We have simply harvested the crops which unaided and undirected nature has given us, with slight thought of the future welfare of the forests which have produced them. It is, however, to be hoped that, scientific forestry will find a welcome among us and that we shall, ere long, come to regard our wood and timber lands as invested capital, to be maintained unimpaired, whose increment only shall from time to time be withdrawn from them. Without doubt, the more skillful our management the greater will be that increment.

2. That to raise the amount of our field products to the level of the constant demand for them, requires more extended operations, more intense culture, and a fuller availment of our natural resources.

3. If we decline to avail ourselves of our resources and rise to the level of our opportunities, we shall be obliged to say to one another as Cassius said to Brutus, "The fault is not in our stars but in ourselves" that we have missed the success which might have been ours.

4. It is a plausible conjecture that, when our industries shall have settled upon this ultimate foundation, it will be found:

That New Hampshire has become quite as much a manufacturing as an agricultural state.

That one of our leading industries will be the manufacture of our forest products where they grow; resulting in a great increase of population and wealth all over the state.

That the production of our field crops will have been better adjusted than now to the demands of their best markets; one of which has been created by our summer visitors from without the state.

*THE NEED OF AGRICULTURAL EDUCATION IN NEW HAMPSHIRE.

BY W. D. GIBBS.

During the last fifty years of the century just closed the United States experienced the greatest agricultural growth ever known in history. This growth was due, in large part, to the settlement of the great middle western states.

If we study this period, particularly the effect of its development on the agriculture of the older states, we can see bright prospects for farmers of New Hampshire and other eastern states.

The agricultural progress of the period referred to is strikingly shown in statistics. The value of farm property, including land with improvements, implements and live stock in the United States increased from four billions to twenty billions of dollars. The greatest increase occurs in the north central or middle western states where the value of farm property increased twelve and one-half times. During the same period the value of farm property in New Hampshire increased a little less than one-half.

The cheap transportation of western agricultural products to the seaboard was made possible by the building of railroads and steamship lines. Railroad mileage increased from thirty thousand to one hundred and ninety-four thousand miles. In this also we notice the greatest development in the central western states which increased their mileage seven and one-half times. Systems of trunk lines and through freights were established and rates were greatly reduced. In 1862 it cost 26 cents to ship a bushel of wheat from Chicago to New York City; in 1900 only 4½ cents. Shipments of produce from west to east increased enormously. The great lake tonnage, for exam-

*Delivered at Bethlehem, July 27, 1904.

ple, in 1900 more than doubled that of thirty years before.

People were attracted to this new Eldorado of the west by the cheapness and productivity of the land. The extensive building of railroads, canals, and steamship lines and the perfection attained in the management of them made it possible for the western farmer to market his produce in eastern cities in sharp competition with his brothers in the "back east" states. The market value of a pound of butter on a New Hampshire farm was no longer determined by the local supply but by the supply in Iowa and Illinois. Cheap productive lands, improved farm machinery, and low freight rates all worked to the advantage of the western farmer.

The agricultural conditions as they existed during the closing fifty years of last century were discouraging enough for the eastern farmers, but are they so to-day?

Good western lands are no longer cheap. From 1850 to 1900 farm lands in Illinois increased in value six times, Indiana four times, Iowa seven times and Missouri four times. Much of the farm land in this region which sold for ten to twenty dollars per acre fifty years ago is now held at \$80 to \$100 per acre. Under such conditions it requires careful farming to make a fair interest on the investment even though the soil is productive. I have not the statistics at hand but I believe, from personal knowledge, that farm mortgages and foreclosures are more common in central Illinois than in New Hampshire. Furthermore, practically all of the good western lands are occupied. In this connection it is interesting to note that the total acreage in cereal crops has not increased materially in the United States in twelve years. The value of farm animals actually decreased one-half billion dollars in the ten years previous to 1899. Furthermore, it should be remembered that our population has increased out of all proportion to our increase in agricultural products. In 1870 we had 40 millions of people and now we have 80

millions. Doubtless this great increase in population, without a corresponding increase in agricultural products, has had much to do with checking our exports of farm products. It is an important fact that the total exports of the leading products of domestic agriculture have not increased materially in the last twelve years. Our exports of bread stuffs have not increased since 1880.

It seems therefore that we may summarize the agricultural situation to-day as follows: While New Hampshire and other eastern states still suffer from western competition, this competition is growing rapidly less owing to the rise in value, and, to some extent, to the impoverishment of western lands. And from the further fact that we can not expect freight rates between the west and east to be lowered materially in the future. Neither must we lose sight of the significant fact that the population of our country is growing rapidly, especially in the cities, and that we are becoming less and less an exporting nation of farm products and more and more an exporting nation of the products of our factories. All of which must mean better markets and higher prices for the products of American farms. And it seems to me this is, or soon will be, especially true of the products of eastern farms, for the best markets of the country are on the Atlantic seaboard. It appears evident, therefore, that we have good reason to feel encouraged and to look for better times. While the value of farm land in Iowa increased in value seven times in the last fifty years that of New Hampshire increased only one-fifth. The tide is surely turning. I would rather invest money to-day in the better class of New Hampshire farm lands than to invest it in \$100 an acre land in Iowa or Illinois. We can no longer advise the young man to go west to farm. He has better opportunities at home to acquire a good farm at a moderate price.

If a new day is dawning we must be prepared to make the most of it. The young men of our farms should be

given thorough training in the science and practice of agriculture. We naturally look to the Agricultural college for this training. The Agricultural college of to-day bears the same important relation to farming that the college of law does to the legal profession or the medical college to the practice of medicine. A few years ago we had only three learned professions, but with our modern industrial advancement and enlightenment we have eight or ten learned professions, and agriculture is one of them. We are confronting many new agricultural conditions in New Hampshire, and these conditions must be met by new methods. Many of the ways of our ancestors are obsolete and no longer profitable. While it is true that our farmers are noted for thrift and industry, and, as a rule, manage their farms well, it is equally true that the general farm practice of the state could and should be improved in many respects.

One source of loss is in trying to cultivate fields which are too rough and stony to yield a profit. Many of these fields would give better returns in forestry or permanent pasture. Even a small amount of extra labor in producing a crop eats up the profits.

Again, many farmers practice continuous cropping. This is particularly true of meadowlands. In many instances good tillable fields are seeded down and remain so for many years. Hay is one of the most exhaustive crops and who could expect soil to retain its fertility producing a crop of hay every year for a series of years. Many of our farmers have yet to learn that rotation, or change of crops, saves fertility.

Not enough attention is given to the growing of clover or other leguminous plants which give good yields of the most nutritious of fodders containing a large percentage of nitrogenous material which in itself is one of the most expensive substances we buy, whether in cotton seed meal or in nitrate fertilizer. The clover plant has the peculiar

property of gathering this nitrogen from the bountiful supplies in the air and transmitting it to crop and soil thus serving the double purpose of giving us nutritious hay and at the same time enriching the soil for the next crop.

Our live stock should be improved, and it would cost comparatively little to do it. Light weight "scrub" horses are to be seen on farms all over the state. It costs practically no more to raise and to keep a good horse than it does a "scrub," and the good horse can do twice the amount of work. Ours is a great dairy state, and yet a large percentage of cows "eat their heads off" every year, and the owners do not know it. It costs no more to keep a good cow than it does to keep a poor one.

Economy of labor is another important point to be looked after. A few days ago I saw a man mowing by hand over a piece of rough ground where the hay was light. He cut about ten cents' worth of hay per hour and was paid fifteen cents for doing it. So much for a dull scythe, a rough field, and a man not over energetic. At other times this season I have observed two men cultivating corn, one leading the horse and the other holding the single cultivator, which was taking one-half a row at a through. With a two-horse cultivator one man would have done the work of four men. At another time I saw three men drawing hay to the barn, all riding the half mile each way, moreover the horses walked the entire distance from barn to field, although they rested about one-half the time while the men loaded and unloaded.

The successful farm manager of to-day should be a man of unusual qualifications. He should know the science of farm equipment, soils, crops, live stock, feeding, veterinary medicine and surgery, horticulture, dairying, etymology as well as other branches, and what is equally important, he should be able to apply his knowledge in a sane, practical way. He should have keen business sense and judgment; and the ability to sleep soundly eight hours a day

and be wide awake and hustling the other sixteen. Withal he should be a man whose honesty and integrity are above reproach, and he should be noted for fidelity. It goes without saying that he should be a good citizen with liberal breadth of view and wide sympathies.

One of the greatest needs of New Hampshire is young men on her farms. Men who have had thorough training in and by agriculture. Agricultural college training, if you please. Many farmers believe too strongly in the school of experience; that they can teach the boys all there is to be known about agriculture at home on the farm. The blacksmith might as reasonably expect his boy to learn to build a Brooklyn bridge by setting tires in the village shop. The average school of experience has good qualities, but there are likely to be more bad qualities than good ones. Its lessons are usually well learned, but the student is likely to graduate before he has completed his course, and to know less than he thinks he does about the studies he has taken. His instructors are frequently unorthodox, and their instruction is too apt to be based on tradition and legend rather than on truth and reason. The school of experience is expensive. None but the rich can afford the time and money necessary for a complete course. Why spend ten years learning how to do that which could be better learned in ten weeks at a first-class college? The modern college of agriculture is to the ancestral methods of experience what the modern express train is to the stage coach of a century ago. Through college training the young man reaches the goal of success in the shortest time and with the least expenditure of money.

Let us encourage our young men on the farms to make the most of their opportunities by securing that training which is necessary to their business success on the farm; to their own comfort and pleasure in life; and to fit them for broad, noble and useful citizenship.

*PROFITABLE POTATO CULTURE.

BY E. A. ROGERS.

It is with some hesitancy that I come before you to speak on this important subject of potato growing, for, as I glance over this well-filled hall, I see among you many whom I have no doubt grew potatoes long before I was born, and it is with fear of being thought presumptuous by you older men, that I launch out on my subject, but to you who grew potatoes forty years ago I have but to call to your minds that under the same cultivation given to-day that you used at that time your crop, as a rule, would be far from a paying one, and why? Probably nine out of every ten would say our land is not as good as it used to be,—that it is worn out. If there is any one thing that I would like to put a stop to it is this misleading talk of worn-out farms. Think of the young men who have gone out from your State to become Governors of the great states of the West, leaders in the political, social and industrial walks of life, and imagine if you can the amount of your taxable property as compared with what you now have had those young men stayed here and bent their energies to developing your own resources instead of those Western States, and then remember that it was in a large measure this slogan of worn-out lands that sent them forth, and you will feel with me that it is high time we buried this fallacy of worn-out soil.

Land that was once good is good to-day. Robbed in many cases of its vegetable matter until it refuses to produce a crop, it lies locked up until nature, after many years, replenishes the humus, or man, by a short cut accomplishes like results, when bountiful crops can again be raised that will put to shame the boasted yields of the West. There is

*Delivered at Rochester, January 5, 1904.

as good land cleared and planted to potatoes every year in Maine as ever was cleared, and I doubt not but the same is true in New Hampshire, but it is a rare occurrence to get as good a crop, even on this virgin soil, as you older ones can remember in the days of your youth.

A mass of blackened and dying vines by the middle of August, followed by rotting tubers and general discouragement is now more apt to be the portion of the potato grower even on this virgin soil; thus you see the trouble is with the potatoes more than with our land, and we must first seek the cause and then apply the remedy.

Some thirty years ago there was borne east to us from the mountains of Colorado the potato beetle, and no man could compile the damage it wrought in crops destroyed, and our scientific men hurriedly sought some means to fight this pest, and soon Paris Green, a deadly mineral poison, was advocated to do the work, and apparently no thought was given to the potato being able to sustain its vitality year after year when exposed to the burning and blighting effects of arsenic, coupled with the injury done the vines by the beetles themselves; and these same injurious conditions hold forth at present over a large portion of our potato growing sections, and only the most favorable climatic conditions will produce an average crop under the system of culture now generally practiced outside of my own state.

If we reverse this system and adopt the more modern one of protecting our potato vines from insects by some means which will not in itself injure the leaves but afford them protection against blight, we not only increase our yield but improve the vitality of the crops to follow, and no general crop or branch of farming in New England offers such inducements for making money as the potato crop when proper culture is practiced, and there need be no limit to a man's farm operations in this line except the size of his farm and his own capacity. The size of his manure

pile is not a gauge to his farm operations in potato growing. Make and use all the farm manures on your farms that you can, but grow your potatoes on commercial fertilizers. A yield of three to four hundred bushels per acre can be raised on commercial fertilizers alone at a cost of less than twenty-five cents per bushel, all labor of whatever sort figured in.

Our land should be broken up the fall before planting, and if your fields are full of witch grass I believe the best method is to use some of the cutaway harrows, beginning right away after haying, cutting up this turf before plowing, using the whole month of August to kill out this witch grass, and mixing this grass and turf into the first five or six inches of soil, and killing out all other plant growth before plowing, which should not be less than eight inches deep. We now have our vegetable matter mixed into the soil in the best possible shape for our coming potato crop, and what is better, in a way that will not prevent the subsoil moisture from coming to the surface by capillary attraction, as it would if plowed under, before being cut up and mixed with the soil by the harrow.

The matter of moisture is very important when using commercial fertilizers; hence the importance of starting the harrow early in the spring, not only to warm up the soil, but to form the dust mulch and hold the subsoil moisture for the future use of the crop. This harrowing should be thoroughly done, for by no other method can we stir and lighten the soil directly under the rows except by the harrow before planting.

It is important to have our rows straight and an even distance apart, and no method of hand planting can equal the planter in quality of work done, and besides the planter will leave the rows in ridges large enough so that there is no danger of digging out the newly planted seed by cultivating as soon as the planting is finished.

How much fertilizer shall we use per acre? Here on our

old fields I should not use much less nor much more than one ton per acre of high grade goods, and use about 1200 pounds of this in the drill at time of planting, getting it down as deeply as we can with the planter; the other 800 pounds being broadcasted and harrowed in before planting, or broadcasted and cultivated in about the time the potatoes are breaking ground or a little later.

I prefer a riding, two-horse cultivator, as better work can be done and much more of it for the same cost, getting up close to the base of the ridges that form the rows. This cultivation should begin as soon as possible after planting, and the deeper the better at this time, and this deep cultivation should continue at least every week until the potatoes are up, and should be so thorough that not a live weed can be found between the rows, but all clean, loose soil.

As soon as the potatoes are breaking ground go over them with a horse hoe and bury them right up with from one to one and one-half inches of soil; this will smother all little weeds on the rows and leave the field entirely free, and all with machine work. The cultivating should continue at least until the second hilling by the horse hoe, which should be done when the vines are from six to ten inches high, but shallow cultivation should continue until the vines get too large to drive through them, but the cultivator should be narrowed up in order not to tear down the hills.

Good seed, intense cultivation, and high-grade fertilizers are all important, but the best of seed and the highest and most scientific cultivation with all the fertilizer the crop can use throughout the season will fail without protection to the vines against blight and insects, but with thorough spraying we are not only sure of saving our crop from rot, but are sure of a much larger yield, and there can be no thorough spraying with a poor sprayer; bugs can be killed readily by sprinkling, but you cannot prevent blight and rot satisfactorily by any sprinkler, and a low pressure

or poor sprayer is in fact a sprinkler, and should have no place whatever in our potato fields. A very good, four-rowed, hand-pump sprayer can be bought for from thirty to thirty-five dollars and will do good work if a good man has hold of the pump handle, but a power sprayer costing about sixty dollars is much more satisfactory and will give pressure enough for thorough work, which is difficult to get with a hand-pump sprayer. A sprayer to do perfect work must have a working pressure of at least fifty pounds, and be so arranged that it can be readily adjusted to that pressure, and should have a good agitator playing close to the bottom of the barrel or tank. A sprayer as above described will save our potato crop in any year, but I want to warn you against being induced to buy a cheap machine. I know of only two that I could recommend, and I have seen used or used myself, nearly all makes.

I have found Bordeaux Mixture and Bug Death the best spray mixture now known, as the Bug Death not only kills the bugs but is in itself a good fungicide and will hold the Bordeaux on the leaves the season through, and does away with all that burning and blighting effects of the arsenical poisons; and while costing some four dollars per acre more over Paris Green, the increased yield has never failed to give me a large profit. We should begin to spray when the vines are not over six to eight inches high, and remember that the first spraying is more for blight than bugs, as there rarely will be many slugs hatched at this time, but it is just as important that the Bug Death be added at the first spraying, for a great many eggs will be laid by the time the plants are this height, and if we have the Bug Death on the leaves when the eggs hatch the first bite of the little slug will be its last.

Go over and back on the same rows with your spray at all spraying, for in no other way can you do perfect work, remembering that the first application is the only one in which we can thoroughly spray the lower leaves, for as the

vines grow larger it is more and more difficult to reach these lower leaves with our spray; hence the importance of getting them thoroughly sprayed when small with a spray mixture that won't wash off.

The second application should follow in about a week or ten days at the most, with three more, about two weeks apart, making five for the season. I have treated this subject of spraying at a greater length than cultivation as our success hinges on this point. Right here I might add for the benefit of the small grower who is only raising for his own use and does not feel that he can afford expensive spray machinery, that some of the dry Bordeaux Mixture will give paying results some years, but Bug Death will give equally as good if not better results when used dry than these dry Bordeaux mixtures and will kill the bugs at the same time, which none of the dry Bordeaux mixtures will do unless arsenic in some form is added to them, which is injurious to the crop.

One man with a pair of horses can plant, cultivate and spray ten acres of potatoes easily, and at an average net profit of about one hundred dollars per acre over and above all cost of labor, fertilizer and other expenses, using a ton of fertilizer per acre, and leaving his land in much better shape than when he began. No western states offer such inducements as these, and the value of your farms will be doubled in a very few years, and you will wonder at the stupidity of the men who started the fallacy of worn-out soils.

*NEW HAMPSHIRE AS A VACATION STATE.

BY JOHN D. QUACKENBOS.

It is with singular pleasure that I stand before this audience to-day to advocate the pre-eminent claims of New Hampshire to idealty as a summer resort state. To those of you who have lived your lives in the shadow of these inspiring hills — to those who have left for a season the nerve-shattering civilization of our great cities to recruit your energies amid the uplifting influences of this peerless environment — to you, our Governor, into whose wise hands has providentially been committed the development of this American Switzerland as a perfect vacation realm for the poor as well as for the rich, for the overworked and the nervously exhausted, for the lovers of nature for nature's own sake — to all who have at heart the welfare of our dear Northland, I, as common with you in interest and in a love alike for her institutions and her ennering pastoral life, extend greetings and congratulations this afternoon. I congratulate you that New Hampshire has become known to the world in all the variety of her attractions and infinity of her advantages, and that you are here to enjoy them to the full.

Russell Sage, the New York banker, has recently disclaimed the utility of vacations, pluming himself with the fact that he has never taken one in his long and sordid life, never taken a week from his schemes of selfish aggrandizement for communion with nature and nature's God, never possessed sufficient insight into the deep springs of goodness in human nature, nor sufficient interest in things spiritual as they pertain to human existence and human destiny, to realize that life is not altogether a pursuit. God be praised that so close-fisted a philosophy makes but few

converts in this enlightened land. Vacation is a recognized necessity — intermission of regular employment — for the symmetrical development of the mental faculties and the objective utterance of the soul's resources. Without it there must be unbalance — dwarfed, one-sided expression — and as a result, apathy, cynicism, moral degeneracy, perhaps criminal explosions. Who will venture to contend that periodic indulgence in pure passiveness (*dolce farniente* or sweet no-nothing) does not bring to the overstrained brain fresh vitality, facile capacity for effort — does not inspire to life for the best things, for the highest things?

“Rest,” sang Roman Ovid; “the field that has rested gives a bountiful crop.” And where can be found opportunities for rest and relaxation superior to those exhibited by this Granite State, which offers to the summer visitor?

1. Phenominal advantages in the way of mental and physical recreation.

2. A climate unequalled for its salubrity.

3. A country home at a reasonable figure, located amid the most romantic scenery in the East.

4. Cheapness and ease of housekeeping that places within the reach of all vacationists the privilege of residence in the White Mountain State.

Foremost among the attractions of New Hampshire as a summer residential region are the advantages it offers for physical and intellectual occupations that inform as well as amuse and rest. Not only do natural charms invite to aesthetic passiveness, teaching “the divine principle of leisure,” the country affords, as well opportunities for active pursuits — for mountain drives and climbs and horse-back rides; for wheeling and motoring; for brooks beneath fresh tintured skies; for effort in the sunburnt hay fields; for sketching, photographical, geological and botanical excursions; for visits with bird neighbors and four-footed Americans; for boating, bathing, and all

aquatic sports; for fishing and hunting; and for golf, the great national pastime, the cleanest of amateur sports, the ideal game for both sexes, all ages, and every phase of invalidism or grade of vigor. To the geological student, no section of New England presents greater interest, whether invited by its gems, metallic ores, and economical mineral products; by its hydrography — its river drainage, rapids and waterfalls, its lakes and reservoirs and equalizers of the surface flow, and its medicinal springs; or by its evidences of erosion in water-gap, canon and grotto; its extinct volcanos; its glacial phenomena, including moraines, kames, and lenticular hills, grooved valleys and rocking stones.

Artists in search of the rare, the novel, and the quaint may gather enchanting materials among the deserted farm-houses embowered in woodbine or rank-scenting damask roses, the crumbling old mills with their time-worn wheels and scum-covered eddies, the lonesome lily ponds, the dusky-mantled mountains now channelled in sable cloves, anon laughing in proud-pied slopes.

The ornithologist will find New Hampshire a peculiar meeting ground for Alleghany and Canadian bird forms, and hence exceptionally adapted, by the variety and profusion of its bird life, to the study of our avi-fauna. Some four hundred different species of birds have been noted in the field and forests. All the New England thrushes are represented; and the "dulcet jargoning" of the tawny-brown veery, with the hermit's inimitable flutelike melodies, may be enjoyed in their perfection. Everywhere through the forest aisles, song and white-throated sparrows, blue-headed and red-eyed vireo, bay-winged bunting, Canadian warbler, and winter wren, voluptuous minstrel, sing their sweet lives away. Each of these feathered vocalists possesses matchless endowment, but to the hermit alone belongs the gift divine. Pure and serene in tone, stately in measure, exalted in theme, the song of the

thrush may well be called a hymn of the beatitudes. If you would have a foretaste of the celestial symphonies, go into the cathedral groves where this bird sings.

Inquirers into the science of plant life and distribution may feed to surfeit, through a long holiday, their love of wild bloom, from the trilliums, anemones and arbutus tufts of early spring, to the white and purple asters that checker the October roadsides. All through June the slipper-shaped moccasin-flower rouges the wooded dells; blue and white violets spangle the meadows; mauve azaleas and honeysuckles in orient pearl breathe their odors amid the demi-tints of the forest; and every wall is snowy with blackberry blows, that Walt Whitman said "would adorn the parlors of heaven." Strayed far from gardens long forgotten, hoyden Jacqueminots, rich in attar, spread their gaudy magenta over sequestered pastures; the sweet-leaf eglantine, a waif by the turnpike, wafts with its scent the memory of some little croft beyond the sea "stored with mint and thyme and flowers for posies;" and pale swamp roses, native floral blondes, lay bare their hearts of gold in musky thickets that creep to the edge of the carriage-way. And then,

"born to joy and pleasance,"
"O'er her tall blades the crested fleur-de-lis,
Like blue-eyed Pallas, towers erect and free."

As the summer wears on, the clematis climbs in tangles of silvery plumes, and sweet-scented nymphaeae, "white angels of the crystal lakes," light many a shadowy recess. Pasture thistles with odorous rose-purple heads bristle beside the footpaths; the field vetch opens its azure hoods to the wanton-winged swarm; fire-weeds flaunt their brilliance in the clearings; blue gentians dapple the straths; the purple sarracenia lifts its grotesque pitchers above the queachy sphagnum; and waxy stems of Indian pipe, in the mirk of timber lands, nod their pallid flowers

over the roots on which they feed. The woodland fringe is pranked with orange lilies; and orchid beauties tessellate the forest floors or hide their blooming wonders in the wannish-gray light of the fens. At last, in the September days, the world turned all to golden rod, the yellow-blossomed wayside rings with the cricket's song; and low-voiced streams trickle through glossy pools, where

"Fades the cardinal flower whose heart-red bloom
Glow like a living coal against the green."

In the Engadine valley alone have I seen surpassed the richness and variety of our flora.

And those who delight to follow to its source the mountain streamlet skinkin' clear, or deftly offer the fly of sleeve-silk and feathers along her lake margins, or keep their Parkers busy through "autumn's soft shadowy days" — may enjoy these pastimes at their best.

"I was always fond of fishing," wrote Dickens in "The Fisherman of Lake Sunapee," if, mayhap, the English novelist be the author of this long-lost pathetic tale — "I was always fond of fishing." So have been many good and great men from Simon Peter, who, when crushed in soul by the death of his Lord, sought consolation in the gentle craft, to Chambers and Cheney, to Prime and Van Dyke, those moderns of exalted enthusiasms who have idealized sportsmanship as expressed in angling. The plain provision of the woods and streams has ever satisfied and toned the mightiest intellects. The two small fishes have for centuries fed imaginatively the weary minds that turned from the artificialities of society or the stress and strain of the workday world to rough but stimulating and genuine nature. What are they among so many victims of our modern civilization? The five barley loaves and two small fishes? The barley loaves of a few weeks in the woods involving a total loss of self-consciousness in the presence of naked nature, wildly free — an intellectual elevation and expansion.

And the two small fishes wrested from the stream in the oft-fought battle between confiding instinct and educated reason? What are they among so many? They and they alone are sufficient unto the occasion. In their role as restorers of the protoplasm of exhausted nerve cells, they represent the adequacy of the seemingly inadequate. For they are as capable of many-sided application to the needs of humanity as in the far-off day of the miracle; they are subject to multiplication by the divine hand, until thousands hungering for appropriate spiritual nourishment are fed and refreshed. I need only remind you that, in addition to the black bass, the gamest of game fishes, and the more plebeian habitants of pond and river, the princes of the salmon family make their home in our lakes and streams — the lordly ouananiche, and the brook trout, the darling of the angler, "the gold spangled living arrow of the white water, able to zigzag up the cataract, able to loiter in the rapids, whose dainty meat is the glancing butterfly." To wrest this sparkid coquette from the stream, resplendent in his amethystine "bloom" and cold to the feel as the icy springs he tenants, brings to the angler a rare satisfaction.

Fortunate are they whose leisure permits them to linger among our hills through dreary October's beautiful decay. The climate is then at its best. The days, if ever, are perfect. The hillsides, ablaze with crimson and gold, mirror their glories in the motionless lakes. The sun is wont to go to glade amid purple pomp or throned in pillared clouds of flame; and a rosy lilac afterglow gives mysterious luster to the twilight hour — between sundown and moon dawn.

Visitors who prolong their stay into November will find the climate grow gradually more stimulating, outdoor exercise more exhilarating, life in every way more intense. And, to quote a native poet,

"A beauty is upon the earth this hour
Ne'er seen but in these opening winter days."

At this glad season the ruffled grouse is unsurpassed among American feathered game. To cut this bird down in open woods as it scurries away under full sail—to wake it up with or without dogs, and stop it as it rises by some grass-grown roadside painted with asters, or in some woodland pasture where the berry still clings to the bramble—requires a high degree of vigilance and coolness, and implies the cream of sports. Throughout the fall flocks of wild fowl frequent the larger bodies of water, and their wild chatter mingles at nightfall with “the loon’s weird laughter.” The covers abound in the varying hare; superb woodcock shooting may be enjoyed in many localities, and the fox is always ready to match its trained instincts against the hunter’s intellect. Raccoons give opportunity for exciting moonlight chases. Squirrels are domiciled in every forest. Deer, which by reason of protection have become quite numerous all over the state, may be hunted in certain counties and towns in October and November.

Nor is it only when summer smiles on bank and brae, or when the bracing autumn weather quickens the blood currents, that New Hampshire forces upon him who flies to her bosom for wholesome diversion, or for the cure of mental and bodily ills, the bonds of a hopeless enamourment. Winter brings its own peculiar phases of recreation. No music more thrilling than the bay of hounds unkenneled of a frosty morning to course the fox “that lives by subtlety,” or “the timorous hare that outruns the wind over the spotless snow.” No sports more exhilarating than skating, skeeing, snow-shoeing or riding on the runner, beneath the pulsing fires of the aurora or in the soft smile of “the pale-faced lady of the black-eyed night.”

Beautiful as are these hillsides in their summer clothes, majestic as they appear in their autumnal full dress, no pen can paint, no tongue describe the matchless fairhood of their winter aspect, or do justice to the physical and moral uplift that waits upon a sojourn in their frozen haunts.

*RURAL DEVELOPMENT.

BY N. J. BACHELDER.

In accordance with the practice of organizations and societies engaged in promoting the educational, social, moral, religious and industrial welfare of the people of the state we meet to-day in annual field meeting for promoting the great industry of agriculture and the general welfare of the people of rural New Hampshire. We have assembled in no spirit of antagonism toward any other industry or any other people, but with the belief firmly fixed that the people engaged in any industry or located in any section must manifest an interest in promoting their own welfare and the welfare of their locality if any progress is to be made. The people who wait for other people to boost them into prosperity will be found still waiting after the procession has passed along.

In the early history of the country all the people were engaged in agriculture, and when the development of this industry made various occupations and professions necessary those engaged therein were servants rather than the masters of the farmers and generally made farming an incidental feature of their work. Mills were established on the small streams for carding wool, spinning yarn, weaving cloth, tanning leather and grinding grain, and the men operating them worked a portion of the year tilling the soil. When development had proceeded farther and people were needed to heal the sick, restrain the lawless and minister to the ungodly, physicians, lawyers and clergymen attended to the needs in these directions in connection with farming, which still occupied their first attention.

As the development of the country progressed the operations in the little shops and factories were transferred to

*Delivered at Bethlehem, July 27, 1904.

larger factories and conducted more economically, on a larger scale, by the aid of machinery, and the farmer-doctor, farmer-lawyer, and farmer-minister found sufficient business to occupy their entire time in their profession, and they became professional men. The concentration of business around manufacturing centres made better roads between farming and manufacturing centres a necessity, and later railroads were required to transport the products of the factories, of the farms, and the people from one section to another. The manufacturing, transportation and professional men were required to exercise their mental powers to the utmost in conducting their affairs and in meeting competition, while the farmers were required to perform muscular work in cultivating and harvesting the crops that fertile soil produced. This resulted in the development of men engaged in the former capacities who became leaders in public affairs and shaped the policies of the state and nation according to their own ideas, while those engaged in agriculture continued as "hewers of wood and drawers of water." Soil became depleted, farms were abandoned, boys and girls sought employment in other industries, and agriculture became a distasteful occupation. This picture is mildly drawn but is easily recognized as accurate and life-like. It represents the condition of affairs under what might be termed the old agriculture. Public men became alarmed as they saw this great basic industry losing prestige and receding from the prominence it was intended to occupy in the affairs of state and nation.

The new agriculture became with the establishment of agricultural colleges and experiment stations, the study of soils and plant growth and the establishment of an agricultural science. Text books upon agriculture were prepared and men were trained to instruct in the science. Organizations and societies were formed for diffusing knowledge and stimulating an interest in this industry. The isolation of farm life was broken up by the establish-

ment of social agencies. Through these and other means the farmer's opportunity for, and necessity of, mental exercise and development has become as great as that in any other industry or any profession, and the tillers of the soil may now take their proper place in public affairs, and may soon place their industry where it belongs as the first in the land.

In order to do this we must be active, earnest and persistent. When we have equipped ourselves to manage our own farms in an intelligent and up-to-date manner we are in position to exert an influence for agriculture in a broader field, and when we have placed our agricultural institutions and organizations in line with our work we have afforded a means of recruiting our ranks with valuable assistants. When we have become as active and as jealous of our rights in matters of legislation, both state and national, as those engaged in other industries are of their rights we will have commanded not only the sympathy but the respect of people in general. Instead of abusing others for looking after their interests we should devote the time to looking after our own interests which we have neglected in the past. We need leaders in agricultural thought and influence to meet the leaders in other industries.

The new agriculture demands scientific knowledge in the manipulation of soils and the growing of crops; the use of improved machinery and the sources of fertilization; the intelligent rotation of crops and the demands of the local markets; the management of public affairs in the town, county, state and nation, and proper conduct in society. In fact it demands men of developed mind and strength of character corresponding with the comprehensive scope of the industry. It offers in return for these a life of health and happiness not found in any other occupation or profession in the world. When a person has become so interested in his farm by thorough study of it as to watch his

growing crops and farm animals with feelings of intense enjoyment and walk over his verdant fields with a feeling of higher pleasure than he would find on the costly carpets of a Waldorf-Astoria, he is in position to know something of the pleasures of the true husbandman. In order to secure these results we must send more young men to our agricultural college to study agriculture, we must keep our agricultural organizations upon a high plane above personal prejudices and from excessive social frivolities, and by precept and example create a vigorous sentiment for agriculture. We must enter upon our work with the earnestness, intelligence and sincerity that can only be obtained by a thorough knowledge of it in all details. I now desire to make a few suggestions of specific application to New Hampshire conditions as demanded by the new agriculture and further development of the State's rural life.

Among the important matters of a public nature bearing upon rural development and the promotion of the new agriculture is the construction of highways corresponding to the progress made in other directions. The houses in which we live, the carriages and cars in which we ride, and the churches in which we worship have become costly palaces compared with those used by our ancestors for similar purposes. Our business blocks and our hotels are models of comfort and luxury. The clothes worn, the food eaten and the newspapers read are beyond the imagination of the people who occupied our places a generation or two ago. When we consider the most important matter of all — the roads over which all the people travel — we find no such general advancement, and are forced to the conclusion that the purse strings of individuals have been loosened for individual luxuries faster than the purse strings of the public treasuries for public conveniences in the matter of roads.

I am pleased to say that the legislature of 1903 took a very advanced position for the improvement

of highways — and results are already apparent especially in this section of the state. In fact that progress has been so rapid as to cause Mr. Glidden, the autoist who has traveled extensively by automobile in thirteen foreign countries, to remark on the occasion of the recent automobile run through the mountains that in France alone of all the countries had he found better country roads than those over which the run was made, and upon which the State has recently begun permanent improvements. Nearly \$100,000 has been expended by the state upon about 200 miles of road during 1903 and 1904 under the direction of an engineer, and is the beginning of a comprehensive system of state road improvement. The next legislature will be asked to inaugurate a system covering a series of years, and extending to every section of the state. When New Hampshire has become as famous for good roads as it now is for scenic attractions and general healthful conditions we will witness such rural development as has never been known in the past.

We are of the opinion that the movement to secure national aid for the construction of highways is equitable and right. The people most interested in better roads are those engaged in tilling the soil, comprising about one-third of our population. The farmers of the country have by energy and industry placed upon the markets of the world such volume of the products of the soil as to affect the balance of trade with foreign countries making us a selling instead of a buying nation. They have responded nobly to every call issued in the name of their state or nation. When the military or naval forces have needed recruits the farmers have sent to the ranks their most vigorous sons, many of whom fell in the bloody conflict upon the battle field. They have contributed their full share to the national government in its adjustment of claims resulting from war, in its liberal policy for the development of the country, and have contributed to the enormous surplus in

the national treasury that almost staggers those responsible for its management, They have through their influence and support aided movements for the development of the various industries within the states. They never fail to regard their state and nation with feelings of patriotism and love of country unexcelled among professional and industrial people. In view of these and other facts that might be stated, they now ask in the name of justice that the roads upon which we all travel shall be improved. Before the surplus now held by the national government is distributed to national banks without interest or the erection of expensive government buildings in cities which has become a fixed policy of the government, proceeds farther, the 30,000,000 people of the country engaged in rural pursuits demand a recognition of their rights in the improvement of highways by national patronage.

The preservation of our forests is a matter of importance secondary only to that of roads in rural development. The vast forest covered areas of this northern section, with their power in regulating the water flow in our rivers, and their value in the scenic assets of the state should be measured by a broader scale than at their value to convert into box boards and heaps of saw dust. The forest clad hillsides and valleys in all sections of the state should be handled more intelligently than by a clean sweep of the woodman's axe, to be followed by the fire fiend. The shade trees along our highways have a greater value than for fence poles, and the undergrowth among them is worth more as an artistic adornment to the roadside than the damage accruing to the road from conserved moisture. We would not interfere with the financial interest of the owner of the tree-covered lands, but we would interest and instruct him in the adoption of such policies in the management of those lands as will add to his financial return therefrom and contribute to the public welfare as well. This we understand to be the policy of the state through its state

forestry commission, and the aim of the voluntary society engaged in forestry work. There can be no doubt of the practicability and value of such efforts in preserving our forests. The progress already made in interesting leading men in national affairs in the establishment of a national park in the White Mountain region is a source of great satisfaction to every enthusiastic advocate of rural development in our state. The far-reaching benefits to be derived by the people of New England from the establishment of such a park justify placing the matter under national supervision and upon national support.

A matter of even more practical local application than that of roads and forests is the practice of progressive, up-to-date agriculture. We refer especially to improved methods in farming and supplying local markets with perishable products for which there is demand. One acre devoted to such crops intelligently handled will yield a larger gross income, and possibly a larger net income, than the average farm in New Hampshire. We may well resent all sneers for New Hampshire agriculture by our western brothers when we get a larger income from one acre of fruit than he gets from 50 acres of corn; from one acre of vegetables than he gets from 100 acres of wheat, and a larger income from a greenhouse covering one-fourth acre than he gets from a 160-acre farm. When a little girl receives \$300 in a summer from the guests in a single town for sweet peas grown upon a small patch of land in the garden, and a boy receives \$400 in a summer from the same source from fir balsam pillows, the material for which he gathered in his father's forest, we may well conclude that the opportunity for coining money is not confined to staple crops or limited to the vast prairie farms of the west.

Rural development is somewhat dependent upon the efficiency of the rural schools, and demands that earnest attention be given to this matter. There is no reason why

the country boy or girl should not have the advantages of as good schools as the boy and girl in cities. They may have to travel farther to the school, but when there the length of the school year and the quality of the instruction should be the same in both places. This calls for state aid and supervision, both of which have been inaugurated in our state and vigorously championed by our state superintendent of public instruction. It would be a serious blow to rural New Hampshire to have any relaxation of effort in the development of rural schools, or any legislation that would interfere with the movement.

The industry which is most favorably affecting rural New Hampshire, and susceptible of the greatest development in the future is one particularly in evidence in this locality, known as the summer boarding and summer home movement. Much of the land of New Hampshire has a far greater value for this purpose on account of its scenic attractions and healthful conditions than for the production of crops. Our magnificent summer hotels, including the most luxurious summer hotel in the world, the contribution of one of New Hampshire's loyal sons to his native state, and modest farm houses afford a summer home for a vast number of people who contribute to the social and educational, as well as the financial, welfare of the state. More than 2000 farms have been purchased and improved by our adopted citizens as summer homes, many of them of little value for agricultural purposes.

These summer homes represent an outlay of more than five million dollars, and afford shelter for 20,000 people during the summer months. Varying in cost from the \$100,000 mansion to the inexpensive camp among the trees, they afford ideal summer life within the means of any sojourners. The chirp of the cricket and the nightly song of the whip-poor-will are successful in securing slumber and repose to the occupant of the rude cabin among the pines as the occupant of the elegant villa with its costly

equipment, and such rest as is unknown in the brown-stone mansion upon the fashionable thoroughfare of a rich city. When we consider the fact that about one-third of the population of the country reside within twenty-four hours' ride of where we are now assembled, with elegant trains both day and night into the heart of the mountain region, we get some idea of the possibilities for developing the summer industry of the state under wise laws and liberal policies. These people can purchase their hats and coats and shoes from a thousand factories, and their wheat and corn and beef from a million farms, but they can obtain their health-giving, nerve-restoring atmosphere only from a limited area, the capital of which is New Hampshire, and it is our duty to promote the demand for it and the means of applying it.

Another means of rural development in New Hampshire that is in operation throughout the country, but has been so successful here as to attract national attention, is the social and educational organization known as the grange. Its introduction into the state 37 years ago was met with antagonism and derision by many influential people, but so well has it kept within its sphere, and so much energy has been devoted to its establishment that it now receives the commendation of all intelligent people in the least degree conversant with its work and policy. Any record of rural development in New Hampshire would be incomplete without credit to this grand organization, with its limitless possibilities for the welfare of the state.

In closing I have only to say that I recognize the fact that we have other industries in New Hampshire except agriculture, and other localities except the rural sections, and were I speaking to the people representing those industries, or from those localities, I should endeavor to point out conditions that might be improved, and suggest ways for improving them. We take pride in the prosperity of those industries and those localities. In order to be

well proportioned a state needs an urban as well as a rural constituency, and it is the duty of those in authority to consider the welfare of both. We think the time has arrived when the prosperity of the latter will equal the prosperity of the former if we reckon things at their true value and do our duty as rural people in securing them.

While we hail with delight the rural mail carrier, the rural telephone and the improved means of conveyance to and from the rural districts of the state, we should constantly strive to improve the roads, preserve the forests, promote skill and knowledge in agriculture, improve the schools, increase the summer clientage, and support the grange, to the end that rural New Hampshire may again take its place as the most influential, the most desirable, and the most prosperous of all sections of the old Granite State.

OLD HOME WEEK.

OFFICERS FOR 1903.

President,

FRANK W. ROLLINS . . Concord.

Vice-Presidents,

JOSEPH B. WALKER . . Concord.
JOSEPH D. ROBERTS . . Rollinsford.
CHARLES B. HOYT . . Sandwich.
CHARLES MCDANIEL . . Springfield.
T. NELSON HASTINGS . . Walpole.
GORDON WOODBURY . . Manchester.
ELMER E. WOODBURY . . Woodstock.
TRUE L. NORRIS . . Portsmouth.
RICHARD PATTEE . . New Hampton.
CHAS. F. WIGGIN . . Colebrook.

Secretary,

NAHUM J. BACHELDER . . Concord.

Treasurer,

HARRY H. DUDLEY . . Concord.

Executive Committee,

EDWARD N. PEARSON . . Concord.
WILLIAM H. STINSON . . Goffstown.
HENRY H. METCALF . . Concord.

OLD HOME WEEK ASSOCIATION.

OFFICIAL INVITATION.

To Absent Sons and Daughters of New Hampshire:

Congratulating the sons and daughters of New Hampshire upon their achievements at home and abroad, and desiring to strengthen the ties that bind them to each other and the state, I do, with the advice and consent of the Council and in the name of the State of New Hampshire, invite all former residents to visit the state during Old Home Week, August 15-21, and revive memories of youthful days. The scenes of youth, although marvelously changed, will interest you. The brambly pastures where, perchance, as a barefoot boy a half century ago you went for the cows at night; the old mill-pond where you fished and the streams where you swam; the bench in the old schoolhouse where you sat; the site of the old orchard and the well with its old oaken bucket; the old church on the hill—quaint and of sacred memory; the old cemetery, where hearts will be saddened and tears unbidden flow; all will recall days of yore and inspire nobler thoughts. We will welcome you with bonfires on the heights, flashing from hill to hill our great joy at your return. Those of us who remain will greet you around the hearthstone with old-time cordiality and we will assemble in more than one hundred towns in true Old Home Week spirit to give you the glad hand.

Given at the Council Chamber in Concord, this ninth day of July, in the year of Our Lord one thousand nine hundred and three.

NAHUM J. BACHELDER,
Governor.

By His Excellency the Governor, with the advice of the Council,

EDWARD N. PEARSON,
Secretary of State.



TOWN AND CITY CELEBRATIONS.

ALEXANDRIA.

Because of the drenching rain the exercises of Old Home Day in Alexandria on Thursday, August 20, were held in the town hall. The observance was under the auspices of Cardigan grange, whose worthy master, Eva L. Phillips, presided and gave the address of welcome. The programme was as follows: Prayer, Rev. Adolphus Linfield; reading, Mrs. Laura Emery; solo, Miss Angie Gale; addresses, George R. Drake, Manchester, Prof. F. L. Pattee, State college, Pa., H. Taylor Heath, Bristol, J. F. Phillips, Fryeburg, Me., and the Rev. Mr. Linfield. In the evening there was a social with orchestral music.

ANDOVER.

President, H. A. Weymouth; vice-president, C. E. Carr; secretary, W. A. Shaw; treasurer, George E. Eastman; executive committee, John R. Eastman, Nahum J. Bachelder, J. F. Woodward, J. F. Morton.

Old Home Week was ushered in at Andover with bonfires on Kearsarge and Tucker mountains, Cilley, Bachelder and other hills. The remodeled North church was opened for the first time on Sunday, Rev. B. F. Leavitt of Melrose, Mass., preaching in the morning. Special music was provided, Mrs. Loveridge of New Haven, Ct., acting as organist. In the evening the pastor, Rev. T. J. Lewis, had charge of a layman's meeting at which addresses were made by Gov. Nahum J. Bachelder, Prof. John R. Eastman, Deacon Durgin, W. D. Tuttle and Dr. H. A. Weymouth. A suggestion made at this meeting, which met instant response all over the state, was that some portion of every Old Home Week should be set apart for visiting the aged, the infirm and the invalids, "the shut-ins." On Tuesday a basket picnic was held in Bryant's grove, followed by informal speaking under the direction of Pres-

ident Weymouth. Rev. William M. Kimmell of Boston, Professors Eastman and Morton and the Rev. Mr. Lewis were among those heard.

ANTRIM

Antrim's Old Home Day on Friday took the form of a reunion of the pupils of Miss Jenny M. Nesmith, who are banded together in an association with Morton Paige, president, and John A. Balch, secretary. At Kelsea grove, at 11 a. m., Mr. Paige called the company to order and, after music by the Antrim band and invocation by Rev. W. R. Cochrane, gave the address of welcome. The response, written by John B. Jameson, was read by Henry A. Hurlin. The afternoon programme opened with a roll-call. Then Miss Nesmith herself gave a delightful address, dwelling upon various features in her 30 years of school work and mentioning many of her more than one thousand pupils. A call for reminiscences brought out addresses from Dr. I. G. Anthoine of Nashua, ex-Gov. David H. Goodell, George E. Hastings and Richard C. Goodell of Antrim, and John L. Fleming of Tewksbury, Mass. In the evening a reception was held at the town hall at which, in addition to promenading and dancing, the following programme was presented: Violin solo, Miss Nell Forsaith; reading of old compositions, Miss Lottie Balch; vocal duet, Mrs. Jennie Jameson Nims and Miss Gertrude Jameson; paper, contributed to by the pupils, Miss Ethel Muzzey; original chorus, sung by former girl pupils.

ATKINSON.

President, Herbert N. Sawyer; vice-presidents, George A. Page, George P. Dow; secretary, J. M. Goodrich; treasurer, Miss M. A. Page; executive committee, Hermon Noyes, Eugene E. Sawyer, Mrs. Mary C. Greenough.

The observance of Old Home Week in Atkinson was combined with the centennial celebration of the erection of the present academy building. Some 400 invitations were sent out to former residents and students, going into 15 states and four foreign countries. Following beacon fires on the hilltops Saturday night formal services were held in the Congregational church on Sunday. Rev. A. C. Swain of Cambridge, Mass., offered prayer and read the Scripture lesson. Letters from absent ones were read by Professor Rice of Haverhill, Mass. Prof. F. E. Merrill of Haverhill, Mass., and Professor Wood of New Bedford, Mass., made addresses and solos were sung by Dr. E. L. Jordan of Brookline, Mass., and Bartlett H. Weston of West Newbury, Mass. A similar programme was carried out in the evening, with music by a male quartette and with Rev. Joseph Kimball as an added speaker.

On Monday evening an old folks' concert was given under the direction of J. M. Goodrich. Miss S. E. Page officiated as organist and a chorus of 20 voices sang a number of old selections, including the glee, "Lightly Laugh and Sing," "Hurrah for Old New Hampshire," "Labor is King," "Wayside Blossoms," "Columbia, We Love Thee," and "The Wild Bird."

Mrs. Sarah M. Haley of Lee, Master Frankie Stevens of Atkinson, and Mrs. M. G. Calef of Haverhill, sang solos, and quartette numbers were rendered by Messrs. J. M. Goodrich, S. N. Little, W. W. Hatch and J. H. Smith, and also by a mixed quartette consisting of Mr. and Mrs. J. M. Goodrich and Mr. and Mrs. J. H. Smith.

Miss Laura May Wood of Haverhill contributed several readings and the programme closed with the singing of "America" by all.

Tuesday was Old Home Day proper. Herbert N. Sawyer presided. Among the speakers were Prof. Bartlett H. Weston of West Newbury and Maurice P. White of Boston, former principals of the academy; George P. Dow,

postmaster; Dr. Maurice D. Clark of Haverhill, and the Rev. Dr. George W. Gile of Portsmouth, Mrs. Annie Peabody Bailey, a great granddaughter of Parson Peabody, exhibited family heirlooms. The music included solos by Prof. F. E. Merrell of Haverhill, and Nason Sargent of Boxford.

The institution was founded in 1787 and had for many years the governor and council among its trustees. Among its pupils have been many distinguished persons, Levi Woodbury of the United States supreme court; former president Brown of Dartmouth college; President Hale of Hobart college; Governor Kent of Maine; Rev. Samuel Gilman and Jonathan Gillow of South Carolina, and Miss Grace Fletcher, later the wife of Daniel Webster.

The Sunday schools of Alstead, East Alstead and Langdon joined in a union Old Home Week picnic on Wednesday. At Alton an Old Home Week concert was given on Tuesday evening. The Harvell family held its annual reunion at Amherst on Friday. At Lake Asquam on Friday, the eve of Old Home Week, there was a beautiful parade of decorated water craft and general illumination of the lake. Governor Bachelder and staff and ex-Governor Rollins, the founder of Old Home Week, were guests of honor and the occasion formed a fitting preliminary to the celebrations throughout the state.

BELMONT.

President, Dr. H. S. Beckford; vice-presidents, C. E. Cate, Dr. G. H. Ingalls, G. E. Fifield, Thomas Cogswell, Moses Sargent; secretary and treasurer, Helen F. Hill, executive committee, Edwin C. Bean, C. S. Gilman, Mrs. F. C. Hall, Mrs. S. E. Piper, Mrs. M. A. Q. Bryar.

The celebration of Old Home Day in Belmont, for which the town appropriated \$50, was held on Wednesday. On the Saturday night preceding many bonfires were

kindled, including the third annual blaze on Foster Hill. The town hall was decorated for Wednesday's exercises and filled to its utmost capacity with interested auditors. President Beckford had charge of the exercises, which opened with prayer by Rev. T. G. Wilder of Tilton, and music by Kempl's orchestra of Franklin. The first speaker was Governor Bachelder, who had traveled all night from the Thousand Islands in New York in order to be present.

President Beckford read interesting letters from Col. Thomas Cogswell, Frank W. Hackett of Washington, D. C., Mrs. Augusta N. Pease of Chicago, and the names of about a dozen others from whom letters had been received, including one from ex-Mayor George W. Fifield of Lowell, who said he felt he should compensate for his inability to be present by sending a check for \$25.

Francis A. Badger, grandson of Governor Badger, gave a brief history of the Badger family, and other speakers included Naval Officer James O. Lyford of Boston, Dr. Frank A. Foster of Lynn, Mass., William M. Leonard, Judge Frank M. Beckford of Laconia, and Hon. E. C. Bean of Belmont. A bountiful supper was served to visitors and in the evening a reception and social were held, the programme including piano solos by Miss Eva Pike, vocal solos by Florence Adams of Pittsfield, and readings by Miss Virginia Cole of Lakeport.

The following were elected officers of the association for the ensuing year: President, D. W. Gale; secretary, Helen F. Hill; vice-presidents, Moses Sargent, Dr. G. H. Ingalls, Thomas D. Wells of Hartford, G. W. Fifield of Lowell, and J. F. Sleeper; executive committee, T. L. Fuller, Mrs. W. C. Wells, R. G. Hoyt, Brock Dearborn and F. K. Johnson.

Bow.

President, Henry M. Baker; vice-presidents, Walter Putney, Charles B. Rogers; secretary, Edwin A. Colby;

treasurer, Frank A. White; executive committee, Robert W. Upton, Warren C. Saltmarsh, Sterling A. Colby.

Citizens of Bow met in Wheeler's grove on August 22 for an organization meeting and basket picnic. Robert W. Upton, master of Bow grange, presided and the following programme was presented: Opening address, Robert W. Upton; song, choir; address, George A. Saltmarsh, Boston, Mass.; essay, Miss Maude I. Putney; song, male quartette; address, Sherman E. Burroughs, Esq., of Manchester; vocal solo, Miss Abbie Putney; address, Rev. Christie W. Burnham of Providence, R. I.; vocal duet, the Misses Nella and Mabel Larmour; address, Hon. Henry M. Baker; remarks, David N. Morgan; song, "America." The officers named above were elected after which dinner was served and the afternoon was spent in social pleasures and athletic sports, including a baseball game in which Bow Mills defeated Bow Bog 11 to 5.

BRENTWOOD.

Because of the rain Brentwood's Old Home Day exercises on Friday were held in modified form in the Congregational church. A basket dinner was followed by literary exercises. They included the singing of "Nearer, my God, to Thee," "America," and "Home, Sweet Home," and tenor solos by Clarence M. Collins of Exeter. The address of welcome was made by Arthur W. Dudley, president of the Old Home Week association, with responses by John H. Wales of Manchester. Albert A. Wadleigh of Boston read a paper on "Brentwood of My Boyhood," and Warren Marshall responded to "Brentwood of To-day." Others gave interesting reminiscences or made brief remarks and letters were read from absent sons and daughters.

BRIDGEWATER.

Bridgewater held its fifth annual celebration of Old Home Day August 21, as Thursday, the day appointed,

was very rainy. On Friday the weather was fine and 200 people were present. At 10 a. m. a ball game was played by Bridgewater's first and second teams, the first team winning the game 20 to 4. At noon a picnic dinner was served.

The afternoon exercises were of great interest. The hall was tastily decorated with evergreen and was filled to overflowing, many being unable to gain an entrance. The programme began by singing "America." Prayer was offered by Rev. F. W. Fitzpatrick of Meredith Center. The speakers were J. L. Boardman, Boston; A. P. Worthen, Esq., Boston; Frank M. Barnard, Boston; Luther Pillsbury, Boston; Arah Prescott, Hooksett; Sylvester Cross, Bristol; Rev. A. S. Garver, Worcester, Mass. Mrs. Scott W. Fletcher of Laconia read a poem written by Elizabeth Whittemore of Bridgewater, and also a poem by herself. Letters were read from F. A. C. Nichols, Sacramento, Cal., L. W. Prescott, Warren; Thomas Shute, Massachusetts. At the close "Auld Lang Syne" was sung. At the business meeting officers as follows were elected for next year: Sherman S. Fletcher, president; David T. Atwood, secretary; A. B. Dalton, W. W. Gilpatric, A. S. Garver, A. H. Morrill, executive committee.

BROOKLINE.

President, Clarence R. Russell; vice-presidents, Orrillo D. Fessenden, Rev. George A. Bennett; secretary, Ella W. Tucker; treasurer, Samuel Swett; executive committee, Albert W. Corey, Frank L. Willoby and Frank P. Kennedy.

Old Home Week was ushered in at Brookline by the ringing of the church bells Saturday evening and half a dozen brilliant bonfires over whose embers the little folks popped corn. Sunday morning Rev. George A. Bennett

preached at union service in the Congregational church and in the evening addresses were made by Rev. George L. Perin, D. D., of Boston, Rev. Charles E. Nash of Galesburg, Ill., Rev. W. G. Babcock and Rev. George A. Bennett. Miss Ethel M. Rockwood sang a solo. Similar services were held on Sunday, the 23d.

Friday was Old Home Day and the town was beautifully decorated for the occasion. The Ashby, Mass., band gave a concert and at 11 o'clock the exercises began in the Congregational church. Rev. George A. Bennett offered prayer and President Russell gave the address of welcome. After the singing of "Auld Lang Syne" the oration of the day was given by John F. Hutchinson of Lexington, Mass.

Miss Edith Barber of Townsend, Mass., read an original poem, which in places was accompanied by the strains of a violin playing "The Old Oaken Bucket," Llewellyn Powers, violinist. The church exercises closed with a solo by Mrs. Newton Holcombe, Miss Grace Whitcomb, accompanist.

A bountiful dinner was served in the town hall. After dinner Mrs. Ella Tucker read letters from the absent and then these gentlemen spoke: O. D. Fessenden, Rev. George Bennett, Brookline; J. A. Horton, Greenfield, Mass.; J. F. Hutchinson, Lexington, Mass.; Rev. G. L. Perin, Boston; George Abbott, New York; George Sampson, Lexington, Mass.; Dr. Holcombe, Brookline; Hon. Franklin Worcester, Hollis; Rev. W. G. Babcock, Brookline.

The day ended with a baseball game, a band concert and a dance.

Bennington, which was a part of Hancock until 1842, joined with that town in its Old Home Day celebration. At Center Barnstead the G. A. R. and W. R. C. held a picnic on Friday at Elmdale farm. At Berlin the annual reunion of the High School Alumni association took place on Monday evening. While Bristol had no celebration,

beacon fires blazed on Saturday night from Round Top and Bristol Peak. Another feature of Saturday was the celebration of the laying of the first cable in Lake Winnipiseogee, carrying telephone wires from Meredith to Bear Island. The latter's summer residents celebrated the event with aquatic events in the afternoon, illuminations, fireworks and addresses in the evening. Among the speakers were Baron DeBussche of the German embassy, Congressman Powers of Newton, Mass., and Rev. W. S. Hawkes of Springfield, Mass.

CANDIA.

President, Moses F. Emerson; vice-president, Dr. L. J. Young; secretary, Sally W. Emerson; treasurer, George E. Colby; executive committee, C. Henry Brown, Frank D. Brown, Dr. George H. French, Alfred Mulliken, Jr., Mrs. Emma J. Philbrick, Mrs. Rena C. Emerson, Mrs. Abbie Kimball, Boston; L. B. Turner, John H. Foster, Francis D. Rowe, Mrs. F. D. Rowe, Miss Helen Palmer, Mrs. J. H. Foster, and Mrs. Mary B. Page, Candia.

The third annual midsummer reunion and banquet of the Candia club was held in that town on Wednesday, August 19, with 150 members present. After a reception in the morning and dinner at noon the formal exercises of the day took place.

Moses F. Emerson, president of the club, called to order and briefly extended greetings. The address of welcome was given by Mrs. Victoria M. Rowe. The report of the committee chosen last February in Boston, consisting of Sam Walter Foss, F. D. Rowe, Dr. F. P. Emerson, was made by chairman Foss. After explaining that the purpose of the committee was to devise means to help the town in some way, he stated that the committee had decided upon good roads. A fund of \$100 had already been received and all additions to this fund would be applied

to work on the roads. This year a beginning would be made in carrying out the idea of helpfulness to the town.

Remarks were made by Dr. F. P. Emerson, Dr. L. J. Young, the Rev. S. F. French, the Rev. J. S. Curtis, the Rev. A. H. Thompson, Judge Pratt of Quincy, J. Lane Fitts, the Rev. Mr. Kneeland of Candia, C. F. Flanders of Concord, the Rev. T. C. Pratt and Frank W. Sargent of Manchester.

Music was furnished by Miss Annie Daniels of Putnam, Ct., violinist, and Mrs. Hattie Lane Walker of Haverhill, Mass., vocalist, and Sam Walter Foss gave two of his poems, "When We Worked Our Tax Out on the Road" and "The House by the Side of the Road."

CANTERBURY.

While the town of Canterbury held no Old Home Week celebration in 1903 two very interesting gatherings were located within its limits. One was the fourth annual reunion of the Ayers family at which the following officers were elected: President, Charles H. Ayers, Canterbury; vice-presidents, J. E. Ayers, Denver, Dr. J. G. Ayers, New York; secretary and treasurer, Mrs. A. R. Ayers, North Boscawen; executive committee, Miss Helen McG. Ayers, 1, Concord, Mrs. Susan G. Young, Lisbon, Harry G. Clough, Canterbury.

Among those present were representatives from Denver, Toledo, Pittsburg, Washington, Lisbon and Providence.

The other was what was started as a reunion of the Cogswell family, but has developed into an Old Home Week celebration by the inhabitants of Hill's Corner school district in the east part of Canterbury, adjacent to Belmont. Dinner was served under the trees near Hill's Tavern. Afterward the company went to the famous "worsted church" where the speaking occurred, William M. Cogswell of Tilton presiding. The speakers were

Francis Badger of Belmont, Hon. John Kimball and Hon. James O. Lyford of Concord, Hon. Edwin C. Bean of Belmont, and Dr. George H. Ingalls of Jamaica Plain, Mass. Songs by Mrs. True of Tilton and Miss Brown of Loudon were interspersed.

CHARLESTOWN.

President, Fred H. Perry; vice-presidents, S. T. Searle, Willifred E. Hunt; secretary, Mrs. Frank Soper; treasurer, Wesley H. Fish; executive committee, H. E. Corbin, S. T. Searle, F. W. Hamlin.

Charlestown's Old Home Week association continued its organization for the year by the choice of the officers named above, but voted not to hold a formal celebration in 1903.

CHESTER.

President, N. W. Goldsmith; vice-presidents, A. F. B. Edwards, W. B. Underhill; secretary, Francis E. Robie; treasurer, George S. West; executive committee, Charles L. Eastman, Samuel L. Marston, William P. Jones.

In Chester, also, no celebration was held under the auspices of the town association, but Chester grange made its regular meeting in Old Home Week into an Old Home sociable, box party and entertainment, with an appropriate programme of music, recitations and reminiscences.

CHICHESTER.

President, Charles E. Garvin; vice-presidents, Charles A. Langmaid, George M. Munsey; secretary, J. L. T. Shaw; treasurer, Jeremy L. Sanborn; executive committee, Walter S. Langmaid, Herbert T. Leavitt, George W. Lake

The citizens of Chichester began to celebrate Old Home Week Saturday night with four big bonfires. Sunday

evening service at the Methodist church was in evidence of Old Home. Tuesday, the weather being propitious, at an early hour the people began to assemble at Langmaid's beautiful grove.

The program included a basket picnic, a barbecue, where two whole lambs were roasted, and a beanbake.

A unique feature was the serving of baked beans in individual bean pots holding about half a pint, which were an exact imitation of the old fashioned bean pots, and which bore the inscription, "Chichester's Old Home Day, Aug. 18."

Following the dinner there were literary exercises where a platform had been erected, which was prettily decorated with American flags, etc. The principal address was by Hon. Henry F. Hollis of Concord, who spoke pleasingly on Old Home Day and how it should be observed. Readings were given by Mrs. E. A. French and prayer was offered by Rev. Mr. Patterson.

A large number of letters from the absent sons and daughters of Chichester were read, all expressing sincere regret that the writers were unable to be present.

There were also addresses by Charles Carpenter, Charles Langmaid and others. The presiding officer was Charles E. Garvin.

The musical features were furnished by an old-fashioned singing school, conducted by Jonathan C. Lane of Concord, the old-time singing school master, and the songs sung were those of that time.

The exercises were concluded with old-fashioned sports, such as skittles, the three jolly boys throwing sticks at Aunt Sally and Uncle Dick, etc.

CONCORD.

Concord's fifth annual Old Home Day on Thursday was combined with a magnificent municipal celebration of the

semi-centennial of the adoption of the city charter. An appropriation of \$3,000 was made by the city government for that purpose.

On Wednesday evening Mayor Charles R. Corning, the living ex-mayors and the members of the present city government gave a public reception in Phenix hall. For Thursday the city was beautifully, completely and elaborately decorated, but the weather of the morning was so bad as to threaten the success of the day. Fortunately it cleared for the great parade of the afternoon.

At six o'clock in the morning the church bells rang and an hour later a callithumpian parade passed over the principal streets under the marshalship of Thomas G. Norris.

At nine o'clock a line of automobiles and decorated bicycles, led by Marshal Fred L. Johnson, went over an extended route.

At ten o'clock band concerts were given. At the same hour occurred the formal commemorative exercises in White's opera house. Hon. James O. Lyford presided and prayer was offered by Rev. Daniel C. Roberts, D. D. Hon. Joseph B. Walker spoke on "The Garrisons" and Hon. Amos Hadley upon "The Transition from Town to City."

Mayor Charles R. Corning was the orator of the occasion and the benediction was pronounced by Bishop W. W. Niles.

The feature of the afternoon was a great parade in three divisions, with Gen. George D. Waldron as chief marshal.

The first division was made up of uniformed organizations, the second of civic societies and trade organizations, and the third of representative floats and teams.

Nearly 3,000 men paraded and the line as a whole was a mile long.

In the third division there were many novel ideas beautifully worked out, but the center of interest was the magnificent display made by the Boston & Maine railroad shops.

In the evening a reunion of the graduates of the high school was held in Phenix hall.

CORNISH.

Executive committee, W. H. Child, Josiah Davis, George L. Deming.

The 24th annual meeting of the Cornish Old People's association took place at the Congregational church, Cornish Center, Wednesday, with more than 600 present.

The day's programme began with a reception from 10 to 12 o'clock, followed by a basket picnic. The afternoon exercises were as follows: Call to order by president; singing by chorus; Scripture reading by Rev. M. J. Dunklee; prayer by Rev. A. J. Bailey; music, quartette; secretary's report; music; address of welcome by Pres. William H. Child; responses by Dr. J. W. Wellman, Malden, Mass., William A. Stone of Cliftondale, Mass., Rev. J. L. Jackson of Merrimac, Mass., Rev. J. K. Fuller of Windsor, Vt., Samuel Thrasher of New Haven, H. P. McClary of Windsor, Vt.; singing, "God be with you till we meet again;" benediction.

There were about 150 old people present, one third of these being residents of this town. Thirteen members have died since the last meeting.

The following officers were elected for the coming year: President and secretary, W. H. Childs; executive committee, F. B. Cummings and Martin L. Walker. It was voted to hold the twenty-eighth anniversary on the Wednesday nearest Aug. 20, 1904.

A clambake was held in the evening, at which the Lebanon band furnished music.

Indian River grange, Canaan, gave an Old Home Week programme, including an address by Congressman Frank D. Currier. Silver Lake, Chesham, was beautifully illuminated on Saturday night.

DANBURY.

Old Home Week was fittingly celebrated at the settlement house on Tuesday evening. Stirring addresses on citizenship, patriotism and the home were given by Stillman Clark and Mrs. S. G. B. Nichols. An enjoyable programme of music was provided by Mr. Phelps and by the graphophone loaned by Mrs. Stebbins. After the exercises in the hall refreshments were served and the celebration closed with an enjoyable display of fireworks and the usual bonfire. The settlement house and grounds presented a very beautiful appearance decorated with Japanese lanterns and flags.

The third annual fair and sale of the Ladies' Sewing society was held at the town hall the 19th in honor of Old Home Day and was a success, both socially and financially. The hall was tastefully decorated for the occasion, all of the tables were well patronized, and some \$90 was added to the treasury in the evening. Ice cream, cake and cocoa were served and a literary programme as follows: Music, Mrs. Cora Smith of Canaan; song, Grace Russell; mandolin solo, Chester Howe; Swanee river drill by eight girls; music, Mrs. Smith; declamation, Ivan Lund; music, Chester Howe. Remarks were made by Stillman Clark, Chester Howe, J. C. Danforth, P. G. Sargent, W. A. Tucker, Arthur R. Ford, Dr. Lee V. Knapp, and C. C. Thurber.

DANVILLE.

Old Home Week was ushered in Saturday evening by a big bonfire on Coleman hill. There was a good display of fireworks and three magnificent fire balloons were sent up, floating away in a southerly direction.

Sunday afternoon Old Home services were held in the old meeting house, built 143 years ago, which was filled to repletion. The Rev. A. B. Howard of South Danville,

was the speaker, assisted by the Rev. R. S. Kinney. Mr. Howard paid an eloquent tribute to the Rev. John Page, the first pastor of the old church, and to the early settlers of the town. A quartette and a chorus choir rendered excellent music.

DUNBARTON.

President, John B. Ireland; vice-presidents, Charles H. Lord, Aaron C. Barnard; secretary and treasurer, Mrs. John Bunten; executive committee, John Bunten, I. C. Merrill, C. Fred Story.

Dunbarton had its Old Home Week gathering in the town hall Friday evening. The young people were the principal participants, as the chief feature was a dance. Ernest L. Murphy was the floor director. Special attention was given old-time dances, such as the minuet and the Virginia reel. A supper was served at midnight.

Riverside grange, Dalton, held an Old Home Week basket picnic on Saturday. Church fairs and entertainments were held at Derry on Thursday and Friday. The ninth annual reunion of the Hall family was an event of Thursday at Dover. At Dublin the Unitarians held a sale on Thursday and the Catholics a reception on Friday.

EPPING.

On Saturday night a huge bonfire burned on Red Oak Hill. Thursday, Old Home Day, was ushered in by the ringing of bells at six o'clock and the morning was devoted to the reception of visitors, whose number was surprisingly large. There were band concerts and athletic and aquatic sports until noon, when dinner was served in the Congregational church. At two o'clock the exercises in the town hall began, opening with a prayer by the Rev. E. N. Jarrett.

Daniel W. Ladd made the address of welcome, other speakers being George N. Libby of Melrose, Mass., the Rev. A. H. Thompson of Raymond, and the Rev. Mr. Jarrett.

There was excellent music throughout the afternoon. At four o'clock an interesting ball game was played between the Epping and Raymond teams, Epping winning 5 to 2. At night there were band concerts and a display of fireworks.

EPSOM.

President, Warren Tripp; vice-presidents, Mrs. R. Estelle Hall and Dr. Roscoe Hill; secretary, J. H. Dolbeer; treasurer, Blanchard Fowler; executive committee, Hiram A. Holmes, Mrs. R. W. Heath, Mrs. Lottie Wells.

A very large number of former and present residents of this old town assembled in Tennant's grove at Short Falls Wednesday to observe Old Home Day in the true spirit of the occasion. Fully half of those present were natives of Epsom who have made for themselves homes in other places. The forenoon was devoted to the renewal of old friendships and acquaintances. At noon a basket lunch was enjoyed and coffee and lemonade were served free to all.

The afternoon exercises were conducted by President Tripp and music was furnished by Mr. and Mrs. Charles Cilley and Mr. and Mrs. Albert Sanders. Short speeches were made by Judge Walter H. Sanborn of St. Paul, E. J. Burnham of the Manchester Union, Otis Swan of Newton, Mass., M. H. Cochrane of Pembroke, and John Lang of Boston. Dr. A. P. Chesley of Concord read a poem and G. L. Griffin of Concord gave readings.

While not an Old Home Week observance, Exeter selected Wednesday of Old Home Week for its annual hos-

pital field day. The occasion was devoted to sports and a ball game between the professional and the business men of the town, won by the business men, 21 to 13. The receipts of the day were turned over to the hospital. An additional attraction this year was a vaudeville performance. The affair was held on the Phillips Exeter campus and stores were closed.

FITZWILLIAM.

On account of bad weather Fitzwilliam's Old Home Day was postponed until Thursday, the 27th, when an interesting programme was carried out as follows: Prayer, Rev. A. W. Howes; solo, Miss F. M. Stone; address, F. W. Crooker; poem, written by Mrs. A. Bissell Safford of Akron, Ohio, and read by Miss F. M. Stone; selection, quartette, Thomas M. Blodgett, Francis W. Crooker, Miss Helen M. Parker, Mrs. C. D. Bigelow; recitation, Miss Lucy Fairbanks; address, Rev. O. W. Kimball; solo, Miss F. M. Stone; recitation, Miss Florence Wardwell, Logan, Ohio; selection, quartette.

FRANCESTOWN.

President, the Rev. H. R. Hubbard; vice-president, George E. Downes; secretary, Mrs. James T. Woodbury; executive committee, Mr. and Mrs. E. W. Colburn, Mrs. E. W. Farnum, and Misses Minnie A. Tobie and Annie Clark.

Old Home Week in Francestown opened with a big bonfire on Mount Crotchett Saturday night. On Sunday there was a union service in the Unitarian church, Rev. Mr. Noyes of the Congregational church preaching the sermon. Tuesday evening an enjoyable concert was given, with readings by Mrs. John Swinnington and Mrs. Horace R. Hubbard, and Wednesday was devoted to a

basket dinner on the common and social reception, with speaking, in the hall.

FREEDOM.

Freedom celebrated every day of Old Home Week and finished up on Friday with a glorious time arranged by the Freedom club of Boston, the committee in charge being made up of Albert M. Davis, Fred L. Moses, Frank C. Wood, John M. Brooks, John W. Milliken, Charles O. Godfrey, Frank N. Downs, Lindsey W. Churchill, Edwin R. Thurston, Angie A. Fracker, Luella Wentworth, Emma Towle, Emma F. Bradbury, Flavilla A. Lovering, Caroline A. Lovering, and Dr. George E. Stackpole of Malden.

Among the guests of the occasion were Governor Bachelder of New Hampshire, with Colonels Hutchinson and Kendall of his staff, and Governor Bates of Massachusetts and Mrs. Bates. In the forenoon the two governors met ex-Governor Black of New York, who is a summer resident of the town; and in the afternoon they held an informal reception, witnessed a fine ball game and took part in the speaking in the town hall. President Ralph G. Foster of the Old Home week association and others made brief addresses and a male quartette from Boston furnished music. In the evening a grand ball was held.

The city of Franklin, which has not heretofore celebrated Old Home Week, has formed an association for 1904, and has its plans for the occasion already well advanced.

GILMANTON.

Gilmanton observed Old Home Day with a celebration at the historic Smith meeting-house in the center of the town. At noon dinner was served in the open air under

a grove of ancient oaks in the parsonage yard adjoining the church grounds.

The exercises of the afternoon were in charge of Col. Thomas Cogswell and consisted of an address of welcome, music by the band and a chorus by townspeople and a historic address by Dr. Anna B. Davis of Boston.

The latter part of the afternoon was spent in a round robin in which many partook, telling stories and reminiscences of old days. Refreshments were served at six o'clock and in the evening a concert was given by the Oberon quartette, assisted by Miss Dora Berry, reader.

GREENLAND.

The residents of Greenland celebrated Old Home Week on Tuesday with an old-fashioned picnic and clambake at the John Porter Weeks place at Bayside. It was largely attended and thoroughly enjoyed.

The day was pleasantly passed with games of various kinds and at noon a most tempting clambake was served, to which all did justice.

During the afternoon there was the usual ball game between two picked teams.

Summer residents at Glen gathered around a mammoth campfire on Tuesday evening and enjoyed an hour of song and story, culminating in an address by Prof. Edward Howard Griggs. At Goffstown on Thursday 55 members of the Sawyer family held their first annual reunion and chose the following officers: President, Clement Sawyer, Goffstown; vice-president, Harvey B. Sawyer, Manchester; secretary-treasurer, Charles L. Clay, Harvard, Mass.; executive committee, the Rev. Roland D. Sawyer of Hanson, Mass.; Mrs. May Hazelton, Plaistow; Mrs. Belle Page, Newark, N. J.; the Rev. Harvey Sawyer, Webster; Clarence Parker, Boston; Mrs. F. H. Flanders, East

Andover; Orrin Sawyer, Franklin; and the president, vice-president and secretary-treasurer.

HAMPTON.

The second annual reunion of the Fogg family was held at Convention hall, Hampton beach, on Thursday, with more than 200 present. The programme was:

Meeting called to order by the president; singing, "A Hymn of Welcome;" prayer; address of welcome by the president; poem, Walter LeRoy Fogg, Portsmouth; solo, Miss Charlotte Bean, Walpole, Mass.; paper on Fogg coat of arms, the Rev. Charles Grant Fogg, Union, Ct.; "Do We Need a Genealogy?" Ashael Fogg, Lynn, Mass.; report of secretary, treasurer and committees; election of officers; paper on Samuel Fogg, the original settler, Dr. John Smith Fogg, Biddeford, Me., read by Mrs. Fred C. Brown; solo, Clarence Edgar Fogg, Newburyport, Mass.; "Why We Should Assist in Preparing a Genealogy," the Rev. John Blake Fogg, Monmouth, Me.

In the evening a social gathering was held. At a business meeting the following officers were elected: Honorary president, John H. Fogg, Hampton; president, the Rev. John B. Fogg, Monmouth, Me.; first vice-president, Lewis E. Fogg, Portsmouth; second vice-president, Gridley R. Fogg, Skowhegan, Me.; third vice-president, George S. Fogg, Beverly, Mass.; secretary and treasurer, Mrs. Adna J. Fogg, Boston; executive committee, Frank H. Fogg, Laconia; Wilbur A. Fogg, Malden, Mass.; George Osgood, Kensington; Mrs. Wayland Fogg, Lynn, Mass.; George E. Fogg, Green Corner, Me.; Horatio Fogg Twombly, Framingham, Mass.; Nathaniel Conant, Brookline, Mass.

HANCOCK.

At Hancock appropriate exercises were held in the church on Sunday morning, including a sermon by the

pastor and special music by the choir. In the evening an old-fashioned praise service was held. Wednesday was the day of particular observance, the daughter town of Bennington joining heartily in the celebration.

A spirited game of ball between the Greenfields and a local team was played in the morning, resulting in a score of 7 to 9 in favor of the visiting team. The noon hour was spent in reunions and lunch.

At one o'clock the band gave a concert on the shore of Norway pond and at two o'clock the formal exercises of the day were held in the old church. The programme was as follows: Music, Bennington orchestra; singing, Keller's American Hymn, Hancock church choir; address of welcome by the president of the association, Maro S. Brooks; declamation, Walter Burnham, Bennington; address by C. L. Kimball, Bennington; song; address, E. M. Smith of Peterborough; solo, Miss Jessie Keeler of Bennington; address, Principal H. S. Cowell of the Ashburnham, Mass., high school; music, orchestra.

The association elected these officers: J. A. Tarbell, president; Prof. E. M. Lovering, Winchester, Mass., vice-president; Mrs. W. D. Fogg, secretary; John E. Hadley, treasurer; Almon Hill, Mrs. N. M. Farley, Mrs. W. O. Stearns, executive committee.

The exercises closed with a band concert on the common.

The oldest male resident, Zopher W. Brooks, aged 91, was present and entered heartily into the spirit of the occasion. The stores, post-office and other public buildings and residences were decorated.

HANOVER.

President, H. F. Hoyt; vice-presidents, D. F. Bridgeman, W. G. Hurlbutt; secretary, D. B. Russell; treasurer, E. P. Storrs; executive committee, Asa W. Fellows, O. B. Hurlbutt, H. J. Weston.

Old Home Week was observed at Hanover Wednesday with appropriate exercises. Between 600 and 700 were present, the occasion being a general holiday throughout the town. The number of former residents to return has never been equalled at a previous gathering of the kind.

All the visitors who arrived previous to noon were given a picnic dinner in the grove. At 10 a. m. a social meeting was held.

The afternoon exercises were begun at 1.30 with an invocation by Rev. A. G. Chick of Etna. H. F. Hoyt, president of the Old Home Week association, after a brief address of welcome introduced Prof. D. C. Wells of Dartmouth college. Music followed by a chorus choir in charge of Mrs. T. W. Praddex. Rev. F. A. Pride of Massachusetts, a former pastor of the church of Etna, made brief remarks, after which Rev. Dr. H. A. Stimson of New York delivered an address on Old Home Week and citizenship.

Among the other speakers were Prof. J. F. Colby and Prof. T. W. D. Worthen of Dartmouth college, and John M. Fuller of Hanover. The entire company then sang "America."

On the platform beside the speakers was a delegation of the oldest settlers, including Calvin Webb, aged 94; Charles Chandler, aged 87; Frank Smith, who is nearly 90, and several others whose ages ranged from 80 to 100.

HAVERHILL.

At Haverhill Old Home Day was observed Friday for the first time. In response to about 1,800 invitations sent out by the chairman of the entertainment committee, Hon. Henry Keyes, a great number of old sons and daughters returned to visit scenes of earlier days and to renew old acquaintances.

The celebration was held at Haverhill Corner. Governor Bachelder, accompanied by General Barron and

Colonel Hutchinson of his staff, was among the guests. They were greeted at the station by the president of the day, Edwin B. Pike, and delegations from each of the five granges in town. As the party alighted from the train the governor's salute of 13 guns was fired.

A line of march was formed near the old schoolhouse on Ladd street and, headed by the North Haverhill band, proceeded to the Corner, where, owing to the heavy rain, it was decided to repair to the Congregational church for the literary exercises.

After music by the choir, Rev. D. W. Downs of Haverhill offered prayer. This was followed by an address by President Edwin B. Pike. Mrs. Lillian Ray Miller of Woodsville then rendered a solo. The address of welcome was then given by Rev. C. L. Skinner of Haverhill, and was responded to by Rev. C. H. Merrill of St. Johnsbury, Vt.

Miss Elizabeth E. Bickford of Haverhill recited a poem and was followed by Governor Bachelder in a brief address in which he expressed his gratification at being able to be present on such an occasion, and urged that it be made an annual event.

"While we are continually hearing of the success met with by the few men who have gone out," said the governor, "nothing is said of the men who have gone out who would have fared as well had they remained at home. Not all the good or brainy men have gone from the farms and there is plenty of opportunity for the young man of to-day on the old place."

After the singing of "America" by the audience, the governor held an informal reception, after which all repaired to Pearson hall, where dinner was served to about one thousand.

After dinner the sun came out and it was decided to start the parade, which had been called off in the forenoon. This was reviewed by the governor from a stand on the common.

At the conclusion of the parade the people returned to the Congregational church to listen to reminiscences by old homers and letters from absent sons and daughters.

Among those who spoke were Moses Page of Melrose, Mass., Hon. Alvin Burleigh of Plymouth, Merrill Hildreth of Washington, Rev. G. S. Chadbourne of Malden, Mass., Carlton Rogers, and General Barron and Colonel Hutchinson of the governor's staff.

Letters were read from ex-Governors Rollins and Jordan, Mrs. Lydia E. Pearson of Chicago, Edward W. Emerson, son of a former pastor, Mrs. Fanny Nightingale of Chicago, Hon. Lyman D. Stevens of Concord, and John L. Woods of Chicago. The exercises were brought to a close with a few remarks by Governor Bachelder.

The day's festivities were concluded by a reception in Pearson hall in the evening and old-fashioned dancing was indulged in till midnight.

One of the most interesting features of the celebration was the collection of relics and antiquities which was on exhibition in the old Barstow house.

HENNIKER.

President, Curtis B. Childs; vice-presidents, Dana E. Huntington, Edward N. Cogswell; secretary, Harry B. Preston; treasurer, B. E. Gale; executive committee, D. E. Huntington, B. E. Gale, C. S. Ray, Miss Anna L. Childs, Mrs. Susan M. Gutterson; committee on invitation, Henry E. Merrick, Ada M. Carr, Francis L. Childs.

Old Home Week in Henniker was ushered in Saturday night by a big bonfire on Crany hill at eight o'clock. All through the day the trains had been bringing visitors and by evening the town was well filled. Flags, strung from the liberty pole in Proctor square and from the engine house, and draped on many private residences, gave the village an attractive and gala appearance.

On Sunday union services were held morning and evening in charge of the local pastors, with music by a chorus choir of 50 voices, directed by A. D. Huntoon. At the morning session Col. L. W. Cogswell gave a historical address and in the evening addresses were made by Rev. G. A. McLucas of Salisbury, Mass., and W. D. Fellows of Fall River, Mass.

The feature of Monday was the laying of the cornerstone of the Tucker free library, the gift of one of Henniker's successful sons, George W. Tucker, late of Bradford, who returned to Henniker a few years ago during Old Home Week and later made a bequest of about \$50,000 for a library. Of this amount \$12,000 is to be used in the construction of the building, which is to be finished in April of 1904. The Henniker free library, which consists of 3,000 volumes, will be moved to this building. This is one of the oldest free libraries in the world, having been incorporated by the New Hampshire legislature November 26, 1803, only four years after the incorporation of the library of the neighboring town of Peterborough, which is the oldest. For two years previous there had been maintained a circulating library.

The following programme was carried out: Music, band; prayer, Rev. F. A. Balcom; laying of the cornerstone by Noble Grand G. E. Chadwick and Crescent lodge, No. 60, I. O. O. F.; music, band; addresses by Rev. T. C. H. Bouton, Col. L. W. Cogswell, Rev. G. A. McLucas, Rev. W. H. Frye.

At noon on Tuesday dinner was served in the town hall for 150 guests by the ladies of the town.

At two o'clock the exercises were held in the upper hall. Rev. A. W. Frye opened the meeting with prayer and President C. B. Childs gave a short address of welcome, including the reading of Governor Bachelder's Old Home Week proclamation. Then followed the programme: Music, vocal solo, Miss Goss; address, Rev. J. F. Hoffman,

Reading, Mass.; solo, Prof. E. F. Campbell; recitation, Harry B. Preston; poem, Rev. N. F. Carter, Concord; violin solo, Mrs. Atwood; reminiscences, Hon. O. H. Noyes, W. B. Fisher, Thomas L. Sanborn; reading of letters, the secretary; duet, Messrs. Huntoon and Campbell; singing, "Home, Sweet Home," the audience.

At 8 p. m. a reception was held in the town hall, which was transformed into a parlor by easy chairs, tables and floral decorations. Wahneta orchestra of Hillsborough furnished music.

HILLSBOROUGH.

President, Col: James F. Grimes; vice-presidents, Kirk D. Pierce, Esq., Admiral John G. Walker, Gen. Christopher C. Andrews, Mr. Benjamin F. Dutton, ex-Gov. John B. Smith, Mr. B. F. Keith, ex-Gov. David H. Goodell, William H. Manahan, Esq., Prof. Samuel Dutton, Dr. John Goodell, Mr. George P. Richardson, Mr. Stillman H. Baker, Hon. Frank Hatch, Dr. Henry Newman, Mr. Harry Gilbert Frost, Mr. William H. Story, Dr. Warren P. Grimes, Mr. Ruthven Childs, Mr. Wilson D. Forsaith, Mr. Eben Wyman, Dr. Granville P. Conn, S. W. Holman, Esq., Dr. B. D. Peaslee, Mr. William H. Roach, Mr. Arthur E. Burnham, Mr. Joseph Chadwick, Mr. W. D. Wyman; secretary, James Wilson Grimes.

At Hillsborough the Old Home Week sermon was preached on Sunday by Rev. Harry L. Brickett of Marion, Mass. On Monday the high school alumni held a reunion and banquet, the after dinner programme being as follows:

Invocation, Rev. H. L. Brickett, Lynfield Center, Mass.; "Welcome Back to Hillsborough," ex-Gov. John B. Smith; "How the Idea of Forming an Association Started," Wallace D. Smith of Portsmouth; historical paper, Mary E. W. Brown, Hillsborough; "The Old

Home," Mary B. Newman, Boston; "Views of Old Home Week from the West," W. D. Wyman, Chicago, and Will G. Wentworth, Kansas City; poem, Mary Campbell Upton, Hillsborough; "Our Teachers," Rev. H. L. Brickett, Ellen Fiske Spurr, Frank M. Clement, Helen G. Whittemore, Isabel N. Towle, Antoinette H. Carey.

A score of letters were read from absent scholars regretting their inability to be present.

A business meeting followed at which the articles of an association were adopted and the following officers chosen: Clarence H. Wilkins, Manchester, president; Samuel T. Dutton, New York, William D. Wyman, Chicago, vice-presidents; Wallace D. Smith, Peterborough, secretary-treasurer.

After the banquet a reception was given by Mr. and Mrs. W. D. Wyman of Chicago, at their summer home, and the festivities ended with an informal dance in the evening at the opera house.

On Tuesday an outing was held at Loon lake under the auspices of the daughters of the American Revolution. Col. James F. Grimes presided and a letter of reminiscence from Gen. Charles C. Andrews of Minnesota was read by Dr. John Goodell. The speakers were Hon. George A. Marden of Lowell, Mass., Frank Hatch of Boston, Kirk D. Pierce and William H. Manahan of Hillsborough.

HOPKINTON.

President, Horace G. Chase, Chicago, Ill.; vice-presidents, Grosvenor A. Curtice, Robert R. Kimball, Frank E. Dodge; secretary, Arthur W. Goodspeed, Philadelphia, Pa.; corresponding secretary, Charles C. Lord; treasurer, John P. Kimball; chairman of directors, True J. Putney.

Hopkinton's bonfire of Saturday night was on Mt. Putney, from which 18 other beacons could be counted. On Sunday union services were held in the Free Baptist church

at Contoocook, Rev. N. C. Lathrop preaching the sermon. Wednesday was Old Home Day and 1,000 people gathered in the historic Chase grove at noon.

There was old-time music by the band. Brief remarks were made by Hon. Horace G. Chase of Chicago, a native and summer resident of Hopkinton, "Home, Sweet Home" was sung by a chorus of 18 under the direction of Prof. O. W. Crowell of Concord, and after the invocation by Rev. Louis Ellms the call to dinner was sounded from an old-fashioned horn by John S. Kimball.

At 2 p. m. the chief literary and musical exercises were set in motion by President Chase. A good start was made by the singing of "America." The balance of the programme follows:

"Hurrah for Old New England," chorus; oration, Rev. Dr. C. E. Harrington, Waltham, Mass.; selection by the band; presentation of ex-Governor Rollins, the father of the Old Home Week idea; reminiscences, Hon. Robert Tewksbury, ex-mayor of Lawrence; solo, "Back, 'Mid the Clover and the Bees," Mr. O. W. Crowell; poem, "Old Home Medley," C. C. Lord, Hopkinton; "Old Oaken Bucket," chorus; reading of letters and telegrams from absent sons and daughters, Rev. Thomas Drumm, rector of Hopkinton Episcopal church; "Star Spangled Banner," Miss Lillian Crowell, Hopkinton; "Auld Lang Syne," the audience, chorus and band; benediction, Rev. J. W. Tingley of Hopkinton.

The day's celebration ended in the evening with a band concert in the village square.

The oldest resident present at the exercises was Mrs. Rebecca Webber, who is in her 95th year; the oldest visiting native was Mrs. Jacob Chase, 93 years old, who came from Warner.

The 22d annual reunion of the Cummings family was held at Hudson on Wednesday. On Friday the Hersey

family gathered at Hill. Company A, 14th New Hampshire Volunteers, held its third annual reunion at Hinsdale on Wednesday. Hollis continued its Old Home Week organization, re-electing the officers of 1902, but merged its centennial into the biennial town affair.

LEE.

President, John C. Bartlett; vice-presidents, S. Belle Tuttle, B. Frank Davis; secretary, Mrs. B. Frank Davis; treasurer, Mrs. George E. Chesley; executive committee, Mary A. Hoitt, George E. Chesley, B. Frank Davis.

Old Home Week in Lee was ushered in by two bonfires, one on Wednesday Hill and the other at South Lee. Wednesday was the day of celebration, dinner being served to 400, followed by literary exercises in the church. Rev. J. F. Berry, pastor of the church, offered the opening prayer and addresses were made by President C. J. Bartlett, David L. Bartlett, Amesbury, Mass.; Dr. George W. Atherton, president of the Pennsylvania state college; Dr. Frank A. Davis of Boston; Rev. W. S. Beard of Durham; Mrs. Washington Forbes, Rev. Mr. Young of Newmarket; John Scales of Dover; Herbert G. Davis of Ogdensburg, N. Y.; and Rev. James T. Berry. In conclusion the entire company sang "God Be With You Till We Meet Again," and the orchestra played "Auld Lang Syne." Letters of regret were read from several prominent sons of the old town.

LEMPSTER.

President, Hiram Parker; vice-president, A. F. Perley; secretary, Susie B. Hurd; treasurer, George W. Hurd; executive committee, Fred A. Barton, G. B. Griffith, Simon Makepeace.

The fifth annual Old Home Day in Lempster was held on Wednesday with a large attendance. After a basket dinner came the programme, which consisted of the address

of welcome by the president, Hiram Parker, and short talks from many of the visitors in the following order: Hon. H. W. Parker of Claremont, Dr. C. A. Allen of Holyoke, Mass., Lucius Cragin of Springfield, Vt., P. D. Fletcher of Assonett, Mass., A. B. Parker of Boston, H. H. Metcalf of Concord, Rev. I. P. Quimby of Malden, Mass., Mrs. Louisa Dame and Miss M. E. Perley. Mrs. Maria Perley Gordon recited a beautiful poem and the exercises closed with singing. The programme in the evening was in the hands of the lecturer of Silver Mountain grange, Mrs. Mabel Nichols, and consisted of an address of welcome by the master, Simeon Makepeace, an old folks' concert, readings, recitations, and the farce, "Murder Will Out."

LITTLETON.

Old Home Week in Littleton was principally devoted to the centennial celebration of the Congregational church. The observance began on Sunday morning with an address by Rev. Rufus C. Flagg, D. D., ex-president of Ripon college. A historical address on the Sunday school was given by John F. Tilton. The evening service was a fraternal one, with remarks by the clergy of the town, Rev. John Gregson, Rev. J. E. Locke, Rev. G. W. Southwick, Rev. T. E. Cramer and Elder Bowles.

Monday morning was devoted to a session of the Orange and White Mountain Ministerial association. The speakers were Rev. Rufus C. Flagg of Berlin, Rev. James T. Little of Bethlehem, Rev. Charles L. Skinner of Haverhill, and Rev. W. S. Prentiss.

The topics discussed were, "The Church, Should it be High or Low?" and "Congregationalism, Its Shortcomings, Its Strength and Achievements in the Past and Its Missions."

In the afternoon a woman's missionary rally was held, an address being made by Mrs. Nancy Brown Capron, formerly of Madura, India.

The evening session was confined to historical sketches. The early and middle periods of the church history were treated by Rev. William Forbes Cooley of Littleton, and Charles L. Clay of Harvard, Mass., spoke on the recent period. Greetings were read from former pastors.

Tuesday afternoon was given to reminiscences by Charles D. Tarbell of Southern Pines, a former deacon and for 20 years associated with the church; John F. Tilton, W. W. Lovejoy and John W. Farr of Littleton.

Dinner was served at six o'clock, more than 200 participating. Rev. Frederick G. Chutter, a former pastor, and I. C. Renfrew responded to the toast, "The past and the present." Rev. William Forbes Cooley and D. C. Remich also spoke.

LONDONDERRY.

An interesting Old Home Week service was held in the Presbyterian church at Londonderry on Sunday with special music by the united choirs and tasteful decorations of the church edifice. The participants in the service were Revs. S. F. French, Irad Taggart, George Avery, R. P. Fisher, Thomas Tracy, Joseph Frye, and Charles T. Reeckie.

On Thursday the exercises were held in the town hall. After dinner the president of the town association, William Clark, called the assembly to order and delivered a felicitous address of welcome.

There were five-minute addresses by Rev. Lucius H. Adams of Derry, Robert Boyd, Memphis, Tenn., George Stevens, West Derry, George A. Clark, Manchester; Henry Brickett, Merrimack, Rev. S. F. French, Londonderry, Col. W. S. Pillsbury, Derry, and a longer address by Hon. Henry Goodwin of Boston. Several letters of regret were read by Daniel G. Annis, chairman of the committee on invitations.

The addresses were interspersed with music by an orchestra.

LOUDON.

Old Home Day was observed at Grange hall Thursday evening under the direction of Surprise grange. The programme was wholly by members of the grange and was as follows: Piano solo, "Home, Sweet Home," with variations, Mrs. Nellie Megrath; duet, "Sweet Visions of Childhood," Miss Hattie Brown, Miss Mamie Marston; essay, Mrs. Annie Fletcher; solo, "The Old Home of My Childhood," Miss Marston; paper, "Grange Lancet," Miss Olive Batchelder; solo, "The Little Low-Roofed Cabin," Miss Brown; violin solo, Miss Lila Ordway; solo, "Cottage on the Hill," Jasper Smith; essay, Miss Sarah Rowell; chorus, "The Old Oaken Bucket;" speaking by members present; chorus and grange, "Auld Lang Syne."

At Lancaster an Old Home Week service was held on Sunday evening at which Col. Henry O. Kent presided. Rev. E. R. Stearns gave the opening prayer and ex-Gov. Chester B. Jordan a word of welcome. Rev. J. E. Johnson of Philadelphia gave the address of the occasion upon "New Hampshire: Her Mountains and Her Men," and Miss Grace Weir sang appropriate selections. The meeting closed with "America" by the congregation and the benediction by Rev. V. J. Emery.

At Langdon Professor Winch of Manchester gave an historical address in the church on Sunday, showing that it was just 100 years since the first religious services were held in the town.

The only observance at Lebanon was by the Suburban club, which met with Mrs. Benton and presented an elaborate and appropriate programme.

At Lisbon the pastor of the Methodist church, Rev. C. N. Tilton, preached an Old Home Week sermon on Sunday morning.

Locke's Island, Lake Winnipiseogee, was the scene of a special celebration in the midst of the general illumination of Saturday night. In addition to the bonfire, illumination and fireworks, a literary and musical programme was rendered, including an address by C. M. Vaughan of Lynn, Mass.

MADISON.

Madison held a week-long celebration that was a great success. The invitations sent out were handsome pamphlets, giving a historical sketch of the town, programme of the week, etc. Saturday was spent in receiving visitors, with a big bonfire at twilight. On Sunday the Old Home Week sermon was delivered in the morning by Rev. E. C. Eastman of Meredith, a native of Madison. In the evening Rev. S. M. Crothers of Boston gave an address and there was vocal music by Mrs. Harmon, Miss Reed and Miss Tenney of Boston, Mrs. Manley of Cambridge, Mrs. Hubbard, Mr. Plummer of Lynn, and Mr. Schmidt of Chicago. Monday afternoon a series of ball games was begun, which continued through the week, and in the evening addresses were given by Prof. William Salter and Rev. Edward Cummings of Boston. On Tuesday evening a magnificent concert was given. Wednesday was Old Home Day proper, with band concerts, literary exercises and a social in the evening. Among the speakers were H. W. Harmon, Frank P. Pearson, Frank P. Schmidt of Chicago, and Mayor J. C. Flanders of Haverhill, Mass. Friday night there was a grand ball. The village was notably decorated for the week and all the various committees performed their duties in a most meritorious manner.

MANCHESTER.

Old Home Week observances in Manchester continue to be confined to church celebrations. Sunday morning

special services were held at the First M. E. church, which was erected in 1830, and one of whose charter members, Isaac Huse, was present and took part in the exercises. The pastor, Rev. C. H. Farnsworth, presided, and the speakers were A. S. Lamb and Clarence Platts, with a letter from D. K. Webster of Lawrence, Mass. The Sunday school session was also devoted to interesting reminiscences.

In the afternoon, at the Massabesic church, Rev. Mr. Farnsworth conducted another Old Home Week service, the speakers being E. J. Burnham, "The Very Olden Times;" John P. Young, Rev. Claudius Byrne, Dr. D. S. Eaton, and Francis B. Eaton.

MARLBOROUGH.

President, J. Kilburn Southwick; vice-presidents, Merrill Mason and E. P. Richardson; secretary, Fred E. McIntyre; treasurer, E. P. Richardson; executive committee, Milton White, Don J. Hart, and Charles F. Hayes.

Union religious services were held at Marlborough Sunday morning in the town hall with sermon by Rev. A. M. Markey of the Methodist church. Monday evening a recital was given by Miss Bertha M. Hart. Old Home Day, Tuesday, was observed by a picnic in Centennial grove, with band concerts, baseball, dinner and exercises. President Southwick conducted the programme and Rev. E. C. Bass of Providence, R. I., offered the opening prayer. Rev. David Wallace gave the address of welcome and the principal responses were by Prof. A. E. Dolbeare of Tufts college and L. E. Tilden of Washington, D. C. Letters were read by C. A. Bemis from Miss Ellen M. Stone, the well known missionary, whose parents were once prominent residents; Joseph G. Shattuck of Denver; and Charles E. Richardson of Guthrie, Oklahoma. Male and female quartettes sang, and recitations were given by Miss Hart and by Miss Helen Hardy Wiswall.

MARLOW.

Because of rain on Thursday Marlow's picnic at Edgewood was abandoned, and the Old Home Day exercises were held in Jones hall. In the forenoon Rev. H. S. Ives gave the invocation and there was singing and a social time. After dinner President George F. Gee called the company to order at 1.30. Rev. Alva H. Morrill, D. D., of New Bedford, Mass., was the orator of the occasion, and other speakers were P. E. Fox, Hon. George F. Tinker of New London, Ct., Carl Allen, M. D., of Holyoke, Mass., Prof. George Winch of Manchester, E. A. Jones, W. H. Angleton, and Lucius Cragin of Springfield, Vt., Rev. H. S. Ives of East Alstead, and Rev. F. O. Tyler and W. G. Booth of Hinsdale. A solo was given by Miss Maud Weeks. A short entertainment was given in the evening, consisting of selections from the phonograph and solos by Misses Weeks and Buswell, Rev. F. O. Tyler, Rev. A. H. Morrill and Walter Clissold of Fitchburg. The hall was filled, both afternoon and evening, to its fullest capacity.

MASCOMA LAKE.

The cottagers at Mascoma lake held an Old Home Week celebration on Saturday that was much enjoyed. After a basket dinner in Sargent's grove, Hon. W. S. Carter called the company to order. J. G. Harvey, who was to have given the address of welcome, sent a letter to the same effect, which was read by Mrs. Harvey. A poem by C. H. Hoffman was read by Mrs. Hoffman, and addresses were made by C. M. Hildreth, J. E. Dewey, Rev. C. A. Downs, Hon. E. H. Cheney and Rev. Alan Hudson of Brockton, Mass. Mrs. Frank Johnson and Herbert N. Miller gave vocal solos.

MASON.

Special services appropriate for Old Home Week were held in the church at Mason on Sunday morning. Thurs-

day was the third annual Old Home Day and, in addition to the usual exercises, a marble tablet was unveiled on the site of the first meeting-house, erected 150 years ago.

The tablet was unveiled by Annie G. McRobbie; prayer was offered by the Rev. D. W. Morgan; an able address was given by Willis H. Hosmer, and a poem was read by its author, Miss Harriet E. Hosmer. The company then adjourned to the hall, where a programme of singing by a double quartette, solos by Mrs. Lillian Goodwin of Leominster, Mass., Mrs. Grace Adams of Milton, Mass., and Mrs. Katherine Crockett of Boston; recitations by Ruth Hollander of Boston, a speech by John Philip Hill of Baltimore, Md., and remarks by Rev. D. W. Morgan of Barrington, was given. After this the Greenville Cornet Band, who furnished music for the day, gave an hour's concert on the common.

In the evening the four-act drama, "Down East," was given in the town hall. Athletic sports and baseball were also on the programme.

MIDDLETON.

In Middleton, where town gatherings have been held annually for more than 30 years, the third Old Home Day was postponed from Thursday until Friday on account of the weather.

An elaborate spread was served at noon in the banquet hall, and the literary exercises followed at 2.30 in the hall above, opening with prayer by Rev. Robert W. Drawbridge of Medway, Mass.

The address of welcome was delivered by the president of the Old Home Week association, William H. Hanson, and there were brief addresses by Rev. Robert M. Peacock of Milton, Hon. John W. Rines of Dover, Rev. Sylvester Kimball of Concord, and others.

Old Home songs were sung by a choir composed of Misses Annie Moore, Emma Moore, Helen Cook, and Les-

ter Johnson. There were solos by Miss Cook, with Miss Annie Moore as accompanist. Miss Annie Kimball gave a violin solo.

After the exercises there were sports on the common. The Old Home ball, which is always one of the principal features of Middleton's celebration, was held at night in the town hall.

MONT VERNON.

The town of Mont Vernon on Saturday and Sunday, September 5 and 6, celebrated the 100th anniversary of the incorporation of the town, the triennial reunion of the alumni of McCollom institute, and the annual observance of Old Home Week. Saturday morning a salute of 21 guns was fired by Col. J. Payson Bradlee of Boston. The whole town was beautifully decorated.

The reunion of former students was held at 10.30 at the church. Dr. Henry E. Spaulding of Hingham, Mass., was president of the day, and mortuary and marriage records were presented by Mrs. Fannie Clark of Amherst and Miss Emily Starrett of Mont Vernon, respectively. Addresses were made by Hon. George A. Bruce of Somerville, Mass., Hon. A. M. Wilkins of Amherst, Gen. A. E. Blunt of Wellesley, Mass., Dr. Levi A. Bruce of New York, and Hon. George A. Marden of Lowell, Mass. Music was furnished by the First Regiment band of Nashua and the Schubert quartette of Boston.

Dinner was served in the town hall at noon with post-prandial speeches by Messrs. Marden, Bruce and Bradlee, and Col. W. H. Stinson. In the afternoon Mr. Marden presided over the anniversary exercises of the church, at which the oration was delivered by Mr. Bruce. In the evening there was a magnificent illumination and display of fireworks.

Sunday morning at the church Rev. H. P. Peck, the pastor, presided, and addresses were given by H. Porter Smith of Cambridge, Mass., and Rev. C. C. Carpenter. At the laymen's service in the evening the speakers were Messrs. Marden and Bradlee and Mrs. Elizabeth Bennett of Lowell, Mass.

The annual picnic at Purgatory Falls, Milford, was postponed from Thursday to Friday of Old Home Week. Melvin Village had its first gala day on Friday, with a parade of decorated hay-racks, baseball game, water sports and illumination. At Granite lake, Munsonville, on Saturday, the opening day of Old Home Week, there was a beautiful parade of decorated boats, band concerts, fireworks, and a general illumination of cottages. At Milan the town appropriated \$40 for an Old Home Week observance and an association was formed and officers elected; but no report of any celebration has reached the state association.

NELSON.

The annual town and school reunions at Nelson were held on August 11 and 12. The school association met at the town hall Tuesday afternoon, R. H. Kittredge of Jaffrey, presiding. Among the speakers were Rev. A. E. White of Methuen, Mass., Hon. Hosea B. Knowlton of Washington, D. C., Dr. A. H. Taft of Winchester, and Revs. E. N. and M. F. Hardy. In the evening the programme was enlivened by vocal and instrumental music and by readings by Miss Edith Jewett. The speakers of the afternoon were heard again and others called upon included Mrs. Delia Osgood and Mrs. Frank Jewett, former teachers, and Charles L. Griffin, who was elected president of the association for the ensuing year.

The annual town picnic was held on Wednesday. The speakers were Revs. Merriam of Turner's Falls, Mass.,

Phillips, Hardy and Elder, and Mayor Taft of Keene. The Munsonville band furnished music and Miss Bessie Hardy of West Townsend, Vt., gave readings. The veteran Deacon Harvey Phillips presided. Among the elderly men present were the president in his 85th year, George Stone and Charles H. Whitney of Keene, in their 84th year, V. C. Atwood and Calvin Fletcher, 82 respectively, H. D. Taylor and Calvin Smith, 77 each, Edward Kittredge and Silas Hardy, 76, and several more who were 70 and over. The following officers were chosen for next year: President, Harvey Phillips; vice-president, Hon. James S. Taft; secretary, Charles H. Osgood; treasurer, O. C. Tolman.

NEW BOSTON.

The annual Old Folks' Day of the town of New Boston is properly an Old Home Week observance and is therefore here included, although its ninth celebration was held on June 11. The officers are: President, Thomas R. Cochran; secretary, Mrs. F. A. D. Atwood; treasurer, Deacon Eben Dodge. Exercises were held both before and after dinner, the participants including Rev. D. W. Lovett, Rev. Warren Cochrane of Antrim, Hon. John McLane of Milford, Mr. Carruthers of Boston, Henry Herrick, John A. V. Smith and Aaron Smith of Manchester, and Rev. John E. Lebosquet. The oldest person present was Mrs. Ruhamah Chase of Hopkinton, 93, and there were more than 50 others whose ages ranged from 70 to 90 years.

NEW DURHAM.

Despite the rain of Thursday New Durham's programme was carried out, the exercises being held in the town house at the Plains.

An elaborate picnic dinner was served at one o'clock. This was preceded by the singing of a chant from the

ancient choir book, "Harp of Praise," by the New Durham choir, a quartette organized 50 years ago and composed of David S. Roberts, 80 years old, of Farmington, tenor; Mrs. Mary Jenkins, 66, of Farmington, treble; Mrs. Mary A. Tapley, 70, of Farmington, alto; Joseph Y. Berry, 76, of New Durham, bass. Mrs. Irving Chesley was organist.

During the after-dinner exercises the choir sang "We Come," "Old Homestead," "Temperance Call," "Wanderer," from "The Cythera." The anthem, "How Beautiful," from the Psalter; "Home Again," and "Auld Lang Syne."

The address of welcome was by the president, Rev. Joseph F. George. Hon. John F. Cloutman of Farmington made the main address, and F. W. Colbourn of New Durham, Hon. Charles W. Tapley of Farmington, Simon Berry of Gilmanton, Mrs. John B. Stevens of Dover, and Charles Jenness of Farmington made remarks.

A feature of the dinner was the presentation to each guest of a hand-painted souvenir of the occasion, painted by Mrs. J. F. Dorr.

NEW HAMPTON.

President, Richard Pattee; vice-president, Fred W. Sanborn; secretary, Miss Kathleen T. Piper; executive committee, Charles D. Thyng, Moses F. Merrow, John M. Flanders, Frederick W. Smith and William R. Robie.

New Hampton celebrated her Old Home Day Wednesday, August 19. The morning was spent in social intercourse and a picnic dinner on the campus and in Grange hall. At 2 p. m. the meeting was called to order in Chapel hall by President Richard Pattee. Afterwards the following programme was presented: Piano solo, Miss Edith Cameron of Boston; prayer by Rev. E. M. Poteat of Philadelphia; singing, "America;" addresses by Col. E. C. Lewis

of Laconia and Hon. Joseph H. Walker of Worcester, Mass.; song, "Old Oaken Bucket," James Cleft of Washington, D. C.; address, Rev. Arthur H. Gordon of Cambridgeport, Mass.; song, Rev. E. M. Poteat and Mrs. Poteat; song, Grover Cleveland McFadden; original poem, "When We Were Young," Mrs. Lucy (Fifield) Paul, Lynn, Mass.; song, "Sweet Memories," Mr. Cleft, Miss Thyng, Master Stanwood; reading of poem, "Memories," by Kate T. Piper, written by Benjamin F. Palmer of Roxbury, Mass.; singing, doxology. It was voted to hold the next meeting Wednesday of Old Home Week, 1904.

NEW IPSWICH.

The week's programme at New Ipswich was most varied and interesting. On Wednesday night a colonial ball was held at the town hall, most of those participating being appropriately costumed. The patronesses were Mrs. J. L. Hildreth, Mrs. H. T. Champney, Mrs. R. J. Tabraham, Mrs. R. P. McKeown and Miss C. F. Barr, and the court minuet was danced during the evening.

Thursday was Old Home Day, with a parade, firemen's muster, baseball game, athletic sports and dance. On Saturday the new Congregational church edifice was dedicated and the pastor, Rev. Henry A. Barber, ordained and installed. The dedicatory sermon was preached by Rev. George F. Merriam of Mt. Kisco, N. Y., a former pastor.

NORTH CONWAY.

The 125th anniversary of the Congregational church at North Conway was celebrated on Sunday of Old Home Week. In the morning the Rev. Daniel Merriman of Boston gave the historical address. In the evening the speakers were the Rev. Dr. Edward Everett Hale, Dr. Horace Bumstead, president of Atlanta university, Atlanta, Ga., and the Rev. Dr. Lancaster of Colorado. Letters

were read from the Rev. Pemberton Hale Cressey and the Rev. Edward Payson Eastman, two former pastors of the church.

NORTH HAMPTON.

President, Irving H. Lamprey; vice-presidents, Albert E. Locke, George L. Garland; secretary, Josephine M. Drake; treasurer, George A. Page; executive committee, George L. Seavey, Fred L. Cotton, Fred C. Leavitt.

Perfect weather favored North Hampton's third Old Home Day on Wednesday in Hobb's grove. An orchestra discoursed music and dinner was served. President Lamprey conducted the exercises that followed and the speakers were Judge Calvin Page of Portsmouth, Rev. John Dinsmore, 82, Rev. Daniel H. Evans, Maj. Charles A. Stott and C. C. Hutchinson of Lowell, Mass. A letter of regret was read from Elias H. Marston of Boston.

NORTHWOOD.

Because of rain Northwood's Old Home Day covered both Thursday and Friday. On Thursday there was a band concert in the morning, dinner in Coe's hall, literary exercises in the afternoon and concert and ball in the evening. For the exercises of the afternoon the programme consisted of prayer by Rev. James N. Haskell; address of welcome, W. T. Leighton, treasurer of the Old Home Week association; response, Judge George W. Cate of Amesbury; song, "The Lakes of Northwood," words by Miss Winnie M. Watson, music by W. T. Leighton, sung by a male quartette, Messrs. W. J. Newell, W. A. Caswell, W. T. Leighton and C. K. Foss; address, Rev. James Alexander, Newport; "Rear High Your Granite Crags," quartette; poem written by Daniel M. Smith of Lombard, Ill., read by Miss Leah Demeritt; "My Native Land," quartette; band selection.

The parade of decorated teams, postponed until Friday morning, was a great success, more than 200 vehicles appearing under the marshalship of Orrin W. James. Band concerts and a reception filled out the forenoon. A picnic dinner was enjoyed at noon, followed by music, brief addresses and baseball.

NOTTINGHAM.

President, James H. Kelsey; vice-presidents, Moses B. Nealley, E. F. Gerrish; secretary, Elizabeth W. Cilley; treasurer, Mrs. Albert Watson; executive committee L. A. Watson, P. B. Batchelder, T. E. Fernald.

At Nottingham the Old Home Week celebration began with a big bonfire in the square Saturday night, accompanied by speeches and fireworks, and on Sunday there were special services of much interest. The town hall was crowded Tuesday forenoon at the formal exercises. The Rev. Allen Brown of Providence, R. I., made the prayer, and the Rev. Ira D. Morrison the address of welcome. The response was by the Rev. Abbott Davis of Rochester. At noon a bountiful dinner was served, after which short addresses were made by David Bartlett and George Nealley of Bradford, Mass.; Professor Bartlett of Haverhill; the Hon. John Scales of Dover; Professor Mears of Williamstown, Mass.; and George Waldo Brown of Manchester. Miss Laura A. Norris of Hampton read an original poem. The festivities closed with a dance at the town hall in the evening.

At Newington a huge bonfire was burned on Saturday night and the local grange observed the following Wednesday as Children's day. At Newport the seventh annual reunion and picnic of the Red Schoolhouse association was held at Haven's grove on Friday. At Northfield the 14th annual Glines reunion and several other family gath-

erings were held. At Ossipee the Methodist society held a fair and entertainment.

PEMBROKE.

President, Prof. Isaac Walker; vice-presidents, Samuel D. Robinson, George B. Lake; secretary, George H. Colby; treasurer, Thomas D. Avery; executive committee, George P. Cofran, George E. Gordon, Mrs. E. E. Truesdell, Mrs. George W. Fowler, Mrs. Minnie Carpenter, Thomas P. Holt, Minot Fife.

Old Home Day was celebrated in Pembroke on Tuesday with entertaining exercises in the grove owned by Hon. Martin H. Cochran. There was a large number of visitors in town; many former residents and natives of the town returning to help celebrate the day and view old scenes. Among those present was Mrs. Elizabeth J. (Dudley) Fenno of Milton, Mass., 91 years old. Music for the day was furnished by the Suncook band and the Pembroke Glee club. The principal exercises in the grove commenced at 2 p. m., and were opened with invocation by Rev. P. E. Bourne. Prof. Isaac Walker, president of the Old Home Week association, spoke briefly and introduced Capt. Levi L. Aldrich as president of the day, who gave a cordial address of welcome. The principal speakers were Rev. C. C. Sampson of Tilton, whose subject was "The Church and School as a Means of Character Building," and Prof. Fred P. Emery of Dartmouth college, who took for his subject "Old Home Week in Relation to Education." Other speakers were Hon. Henry M. Baker of Bow, J. O. Parker of Methuen, Mass., John A. Lang and Jerry Good of Boston, and Hon. Martin H. Cochran. Waldo T. Worcester of Concord gave readings.

PETERBOROUGH.

A cheerless rain ushered in Peterborough's Old Home Day observance on Thursday. The parade and morning

ball game had to be omitted, but there was a large gathering at the town hall, where at ten o'clock the opening event of the day took place, a concert by the past and present members of the various military or brass bands that have ever had organization in the town.

The total number of such members is known to be 80, of whom 61 were present and 32 furnished the principal music, under the leadership of F. J. Ames.

During the forenoon there was an exhibition drill in the hall of the grammar school cadets, Harry Brooks captain. At 12 o'clock Peterborough grange furnished a fine dinner to several hundred.

The exercises at 1 p. m. were interesting and largely attended, and included band selections, prayer by Rev. DeForest Safford, welcome by President Charles Scott, several musical selections, reminiscences of Peterborough band by Darius Hadley of Charlestown, Mass., selections by the Mandolin club, solo by Mrs. Claribel Spalding Haynes, speaking, mandolin solo by Miss Lena F. Webber of Cambridgeport, Mass., and a band selection.

Among those called upon for addresses were Reuben L. Reed of South Acton, Mass., who presented a gavel of historic interest to the town; Daniel W. Gould of Chelsea, Mass.; Dr. F. W. Bruce of East Hampton, Mass.; Rev. A. A. Blair of Beverly, Mass.; and Addison Hadley of Lowell.

At the close, the band, followed by 18 non-active members with ancient drums, marched through Main and Grove streets. The band also gave the final concert in the evening, which closed the day.

Antrim and Peterborough played two baseball games, Antrim winning the first 10 to 3, and Peterborough taking the second, a five-inning contest, 8 to 7.

PLAINFIELD.

The town hall was filled to overflowing at the Old Home Day exercises of Plainfield, Friday, 600 being present.

The dinner was a basket picnic with tea and coffee served to all by the association.

The programme for the afternoon was as follows: Overture, orchestra; prayer by Rev. Mr. Trow, Plainfield; president's address, Orra S. Bugbee; response, Rev. M. J. Dunklee; song, Miss Minnie Barbour, Windsor, Vt.; address, Rev. A. J. Bailey, Meriden; poem, Mrs. Marian W. Palmer; short speeches by O. W. Burnap, West Lebanon, Henry W. Hard, Manchester, Prof. R. B. Barton, Hillsborough Bridge; selection, "Song of the Old Folks," orchestra; five minutes' talk by Herbert E. Ward, New York, and Rev. Mr. Trow; whistling solo, Miss Maud Wheeler, Meriden; poem written by Samuel W. Emerson, Concord, read by Mrs. George Ruggles; duet, Miss Barbour and Mrs. Adams; talks by Rev. Mr. Wathen, Claremont, Dr. Hant, Cornish Flat, William H. Child, George L. Dewing, Cornish; selection, orchestra; benediction.

PLAISTOW.

The 13th annual reunion of the Peaslee families was held Wednesday, at George's grove, Plaistow. Over 200 members of the families were present. At noon a banquet was spread beneath the pine trees. Mrs. Howard Freeman Ballard of Haverhill, Mass., read an original poem written by Mary Peaslee Gardner of Plaistow. Mrs. E. A. Kimball of Haverhill also read an original poem. Recitations were given by Miss Gladys Goldthwaite of Newton and Miss Hezel Goldthwaite. Daniel M. Peaslee presided. The after-dinner speakers were the Rev. Joseph Kimball of Haverhill, Dr. Clarence A. Peaslee of Wiscasset, Me., the Rev. Frank Parker of Plaistow and George F. Beede of Fremont. The following officers were elected:

President, Daniel M. Peaslee, Plaistow; vice-president, Charles Cass, Plaistow; secretary, Louise R. Peaslee,

Plaistow; treasurer, J. W. Peaslee, Westville; general committee, Mrs. E. L. Loyd, Plaistow; Mrs. Louise Peaslee, Plaistow; Mrs. Mary Peaslee Gardner, Haverhill.

There was no city celebration at Portsmouth, but residents of the South end got together and arranged a clam-bake with a band concert and fireworks as accessories.

At Piermont the town Old Home Week association met and continued its organization, but voted not to celebrate in 1903.

RAYMOND.

The feature of the observance of the Old Home Week at Raymond was the reunion Tuesday of more than 50 of the pupils of Lucy A. Burnham Knowles, for a quarter of a century a school teacher there.

The exercises of the day opened with a reception to former residents, the receiving party being composed of the officers of the Old Home Week association. The reception was followed by exercises in the Congregational church, presided over by James M. Healey. There was an organ voluntary, followed by the singing of "Home, Sweet Home," in which the entire gathering joined. Prayer was offered by Rev. George S. Chase of Chester, and the address of welcome was by Rev. H. H. Thompson of Raymond, whose special theme was "The Cradle in the Home." The response was by Mrs. Mary J. Underhill.

The musical features consisted of a solo by J. Walter Quimby and a duet by E. W. Smith and Mrs. W. B. Blake. Mrs. Blake also sang a solo.

The chief address was by William B. Blake of Manchester, who gave a review of the progress made in the past half century. There were brief addresses by Mrs. G. H. Tucker, Wesley Poore and Rev. A. Morrill Osgood, and rhymes by Marion E. Greene. The exercises closed by the singing of "America."

At noon a banquet was given in Knights of Pythias hall to Mrs. Lucy A. Burnham Knowles and her former pupils. Following the banquet Mrs. Knowles went to the village school, where she rang a bell and called her pupils together as in days gone by. At this reunion William B. Blake presided, and there were brief addresses by Mrs. Knowles, D. W. Whittier, J. S. Smith, Horace L. Whittier, Forest E. Page, Mrs. Luna G. Sanborn and Rev. Herman T. Sanborn.

A feature of the reunion was the presentation to Mrs. Knowles of a chair by her former pupils, the presentation address being made by Horace L. Whittier. This was followed by the organization of the former pupils into an association, with officers as follows: William B. Blake, president; George E. Fellows, Ralph Gould, Jenness S. Smith, Ida Jenness, vice-presidents; J. E. Ladd, treasurer; Mabel C. B. Hill, secretary; W. B. Blake, Horace L. Whittier, Edgar K. Brown, Fannie E. Brown Poore, Hattie Poore Fellows, executive committee.

RICHMOND.

President, Leason Martin; vice-president, Stephen A. Bullock; secretary, Cora F. Martin; treasurer, Almon Twitchell; executive committee, Charles Pickering, Eugene Ballou, Frank Amidon, Will Weeks, Theodore Parker, Ozro Bolles, D. Dickinson.

The people of Richmond were fortunate in selecting Saturday, August 15, as Old Home Day, for the weather was perfect. A basket picnic was held in Allen's grove, as last year, and was attended by between 500 and 600. The registration book showed a considerable increase over the previous year.

The usual address of welcome by the president was followed by remarks by former residents, among them James Boyce of Winchendon, Mass., a native of Richmond and

now nearly 80 years of age, who spoke with pride of his 17 children and the positions they now hold. William Flint of Winchester proposed the marking of historical sites in town, and Leason Martin, Frank Amidon and Almon Twitchell were appointed a committee to erect a suitable memorial on the place where the mother of President Garfield was born.

Evelyn Amidon recited a poem written for the occasion by Clara Bolles; Mrs. Nellie Prescott gave appropriate readings; and the exercises were interspersed with orchestral music. A ball game and a dance closed the day.

RINDGE.

President, Rev. Granville Yager; vice-presidents, the selectmen of the town, Frederick L. Barrett, Charles F. Platts, Francis D. Converse; secretary, Mrs. Charles F. Platts; treasurer, Warren W. Emery; executive committee, Henry W. Fletcher, John D. Whitney, Clarence E. Towne, Herbert E. Wetherbee, Otis H. Norcross, Arthur M. Hale, Harvey P. Hale, George H. Ingraham, Ralsamond D. Converse, Jason S. Perry, H. Clifton Rice and Clarence H. Thomas.

A union service at the Congregational church on Sunday morning inaugurated Old Home Week. On Wednesday the exercises took place in and about the Rev. Edward Payson memorial church, which was erected in 1797.

The programme began at 10 a. m. by the ringing of the church bell, following which there was a band concert of an hour's duration. At 11.40 a children's concert was held in the church vestry under the direction of Miss Lea of Malden, Mass., and at 12 o'clock Rev. Mr. Smith conducted a half hour religious service for old people. Both these meetings were largely attended. From 12.30 to 1.30 a basket lunch was served.

At 1.30 in the church auditorium President Yager, after reading the governor's proclamation, introduced Melville

Adams, the moderator of the town, who delivered the address of welcome. This was followed by an organ concert, interspersed with selections by a male quartette and violin and vocal solos. A ball game at 3 p. m. between the West Rindge and Jaffrey Browns teams proved interesting and was won by the latter, 13 to 5.

At 5 p. m. a banquet was held in the church vestry, at which President Yager was toastmaster. Hon. Samuel H. Stearns, deputy secretary of state, made the principal address. Other gentlemen who made brief remarks included James Perry of Illinois, Professor Lambert of the Institute of Technology, Boston, Deacon H. E. Wetherbee and Hon. H. W. Fletcher of Rindge. Red Men's band played several selections, and Mrs. Ralph Dent Converse gave both vocal and instrumental selections.

Through the courtesy of George H. Ingraham of West Newton and Rindge a display of fireworks closed a pleasant and successful day.

SALISBURY.

President, John Shaw; vice-presidents, George E. Fellows, Thomas D. Little; secretary, Charles A. Green; treasurer, Buron W. Sanborn; executive committee, Leander N. Sawyer, Ernest C. Currier, Justin T. Stevens.

Salisbury had a magnificent bonfire on Saturday evening. Wednesday was Old Home Day, ushered in by band concerts and baseball games. Dinner was served in the town hall, followed by exercises in Senator Jacob H. Gallinger's grove. President Shaw conducted the programme and Rev. George W. Hawkins gave the invocation. Miss Alice Shaw of Northfield read a paper on "The Women of Salisbury" and Senator Gallinger discussed "The Perils of the Republic." Other speakers were John Foster of Manchester, ex-Governor Pingree of Vermont, Prof. John R. Eastman of Andover, J. Frank Webster of Concord,

Rev. J. H. Bliss and Dr. A. A. Beaton. Several letters of regret were read by T. D. Little.

SANBORNTON.

At the Sanbornton town fair on October 7 President E. A. Lane introduced the literary exercises by saying that the celebration of the day was designed to be a combination of a town fair, town picnic and Old Home Day celebration. Rev. Mr. Fitzpatrick offered prayer; President Lane read an original poem; Rev. E. C. Goodwin spoke upon "Country Life," and Rev. J. W. Perrin upon "Old Home Celebrations;" and Mrs. J. P. Cilley of Belmont discussed public questions outspokenly. Duets were given by George A. Leavitt and Clarence Johnson, and Moulton's brass band rendered concert music.

SANDWICH.

President, Judge William B. Fellows, Tilton; vice-presidents, Horatio Webster, Baltimore, Md., Herbert E. Moulton, L. D. Bean; secretary, Mrs. Emma E. Marston; treasurer, Edwin M. Heard.

Old Home Day was successfully observed Wednesday, the attendance from without the town being larger than on any former occasion. Exercises were held in the town hall, at which there were addresses by President Fellows, Mrs. Charles O. Hodgdon of St. Louis, Horace Hadley of Ohio, Jacob Bean of Boston, Oliver H. Marston of Stoneham and Hon. Paul Wentworth of Sandwich. Music was furnished by a large chorus which rendered old-time selections. In the evening there was a reception in the hall.

SHARON.

The 13th annual reunion and basket picnic at Sharon on Friday was attended by about 250 persons. The pro-

gramme included prayer by Plummer Pierce of East Jaffrey; recitation, Miss Flossie Dillon; song, M. T. Whitaker; remarks, W. P. Bacon of Fitchburg; reading, Miss Mary Morrow; remarks A. B. Stone; duet, Mrs. Marion E. Knight and Miss Mary E. Knight; remarks, Miss Nancy Chandler of New Ipswich, who was a teacher in the town nearly 50 years ago; remarks, John A. Taggart of Miller's Falls, Mass.; poem, Mrs. C. A. Whittaker; remarks by overseer of the state grange, Herbert O. Hadley; reading, Miss Jessie P. Nichols; remarks, H. F. Nichols; closing with a song by Miss Hama Potter. The Willard Bass park trustees, who had the arrangements in charge, organized with S. H. Bacon of Greenville, president; B. H. Sanders, secretary; and H. F. Nichols, treasurer.

SHELBURNE.

President, R. P. Peabody; vice-presidents, William M. Watson, Albert G. Lary; secretary, James Simpson; treasurer, Elery Wheeler; executive committee, Mrs. R. P. Peabody, Mrs. Emma Leighton, Elery Wheeler.

Shelburne's second annual Old Home Day celebration took the form of a picnic in the Albert Wilson grove with a baseball game and an old-fashioned New England dinner, including beans baked in the ground. The following is the order of exercises: Prayer by Rev. Mr. Bosworth; remarks by Judge A. R. Evans, Hon. W. K. Aston, Miss Scudder, Professor Wright, Professor Emerton and Rev. Henry Farrar; music by the Gilead Cornet band.

SOMERSWORTH.

President, H. S. Chapman; secretary, F. H. Wentworth; treasurer, B. F. Hanson; executive committee, Maj. J. N. Haines, H. Duford, Dr. L. E. Grant, Daniel Hodsdon, E. S. Boyer, Sidney Greenwood.

Old Home Week was ushered in on Saturday night with a brilliant electrical illumination of the principal streets and squares. Sunday morning Old Home services were held in the Baptist church, Rev. L. R. Harmon of Bath, Me., preaching, and at the Methodist church, Rev. W. H. Hutchin, pastor. In the evening a union service was held in the city opera house with special musical features and a sermon by Rev. Joseph F. Fielden of Winchendon, Mass.

Monday was calling day. On Tuesday there was an informal reception of visitors and a basket picnic dinner on the Somersworth high school campus. After dinner President Chapman called to order and Rev. W. H. Hutchin offered prayer. Mayor Haines gave the address of welcome and read an interesting historical communication from John Noble of Boston, Mass. Remarks were made by L. Wilbur Messer, secretary of the Chicago Y. M. C. A., John A. Remick of Lawrence, Mass., and Prof. J. W. V. Rich of Providence, R. I., and Miss Elizabeth P. Pope read an Old Home Week poem.

Separate reunions of the different high school classes were followed by a general reunion in the high school building late in the evening. Wednesday, the particular Old Home Day, was observed in an elaborate manner, the mills and shops shutting down for the day. At 10 o'clock there was a procession of local organizations and 40 decorated teams. A. L. Faunce was chief marshal. Vixen Hand-Tub company was awarded a prize for having the most men in line; Martha Washington Rebecca lodge, first prize for the best decorated team; Mrs. S. F. Greenwood, second prize; Daniel Hodsdon, first prize for most novel team; Thomas J. Morrison, second prize. In the afternoon there were sports.

In the hand-tub contest for prizes there were four entries. The result was: Vixen, Somersworth, 187 feet; Triumph, Berwick, 178 feet $1\frac{3}{4}$ inches; Conqueror, Somersworth, 164

feet $11\frac{1}{4}$ inches; Deluge, Somersworth, 160 feet $1\frac{1}{8}$ inches. In the evening there were fireworks and a band concert.

SOUTH HAMPTON.

President, Benjamin R. Jewell; vice-presidents, Jacob Eaton, Gorge W. Fitts; secretary, Dora I. Jewell; treasurer, Frank M. Jewell; executive committee, James M. Carr, Roscoe H. Morrill, Frank P. Forsaith, Dayton Killam, Frank M. Jewell.

The annual observance of Old Home Day at South Hampton was held Thursday. Though rain fell heavily during the greater part of the early morning and afternoon, about 200 persons attended the dinner and exercises at the town hall. The noon hour was devoted to an informal reception, followed by dinner at one o'clock. The address of welcome was by Benjamin R. Jewell, Esq., president of the Old Home Week association, and grace was said by Rev. J. E. Dame, pastor of the village church.

At the conclusion of the dinner addresses were made by Representative D. W. Davis, Hon. E. P. Wallace of Amesbury, Mrs. J. W. Follett of East Kingston, formerly of Boston, and Rev. Mr. Davis.

The addresses were interspersed with selections upon the piano by L. A. Beebe of Dover, Miss Mabel Killam, Mrs. A. E. Bartlett of Everett, Mass., Miss Kate White and Miss Alice Anderson, the singing of "Home, Sweet Home" by Mrs. Eugene Noyes; recitation, "It Is n't All in Bringing Up," by J. W. Follansbee, and the reading of an original poem, "Recollections of Barnard Academy School Days," by P. P. Whitehouse. The exercises closed with the singing of "America" and benediction by Rev. Mr. Davis.

SPRINGFIELD.

President, Charles E. Bailey; vice-presidents, Elwin F. Philbrick and Joseph C. Severance; secretary, Mrs. Florence L. Clark; treasurer, Marshall P. Clark; executive

committee, Charles McDaniel, Joseph Brown, Mrs. Emma Tenney.

At Springfield the Old Home celebration opened Saturday evening, the 15th, with a lecture at the town hall by Rev. George W. Patten, now of Bernardston, Mass., on his "Adventures as a Cavalryman in the Civil War — 1861-'65." Sunday was observed by a sermon appropriate to Old Home Week by Rev. Mr. Patten, a large congregation being present. Special entertainment on Wednesday evening, the 19th, consisted of vocal and instrumental music, readings and recitations; also a fine exercise of Indian club swinging by Miss Stacy; and speeches by the returned sons of Springfield. Ice cream and cake were served and a social hour much enjoyed.

STRAFFORD.

President, George W. Boody; vice-presidents, Paul Perkins, Irving B. Berry, James H. Stiles; secretary, H. S. Hill; treasurer, W. C. Brown; executive committee, Charles S. Hanson, Charles F. Foss, E. Romanze Smith, H. W. Evans, J. H. Foss.

Strafford celebrated her first Old Home Day Wednesday in a manner that placed her in the front rank of New Hampshire towns in respect to elaborateness of programme and success in bringing together sons and daughters residing elsewhere.

Nearly 500 non-resident natives, many of whom were from Massachusetts, registered, and more than 3,000 were fed in the dinner tent and in the old Austin academy, which had to be thrown open to accommodate the overflow. The town appropriated \$300 for the expenses of the occasion.

The celebration took place at the Center and began with a parade of decorated teams under the direction of Gen. Paul M. Foss as chief marshal.

The formal exercises were held in a tent on the academy grounds. The programme opened with prayer by the

Rev. John E. Dane, followed by an address of welcome by President George W. Boody. A poem, "Welcome," was read by Mrs. J. W. Caverly, and the oration was delivered by Rev. Charles Caverno of Lombard.

Other features were poems by Mrs. E. J. Amazen, G. A. Caverly, and Fred L. Shaw, readings by H. C. Woodmans, Miss Grace Foss of Durham and Marion Whitney, cornet solo by Rev. George E. Russell, a song and chorus, "Dear Old Home," composed by J. W. Caverly and sung by a chorus of 50 voices, led by President Boody, selections by the band, and remarks by Col. Joseph S. Prime, Isaac Copp, Charles R. Parsons, John O. Boody, and Rev. E. K. Amazen.

The celebration closed at night with a ball in the town hall.

SWANZEY.

The Swanzey town picnic was held on Friday and was attended by a large number of people. The exercises were more than usually interesting. The following programme was carried out: Selection by the band; prayer by Rev. Mr. Kimball; address by Mr. George E. Whitcomb; address by Mr. E. F. Read; reading by Miss Wiswall; bass solo by Rev. V. W. Blackman; address by Rev. Dr. Adams; violin duet by A. B. Read and daughter; reading by Mr. Bennett; solo by Mrs. Farr; piano solo by Edward Bouvier; address by ex-Mayor Eames; reading by Miss Wiswall; solo by the Rev. V. W. Blackman; violin solo by Miss Beatrice Read; address by Mr. Sprague; reading by Mr. Bennett; music by the band.

Sunday school and grange picnics were held at Salem during Old Home Week, and the C. A. H. club celebrated its fifth anniversary. An Old Home Week basket picnic was held on Saturday in the pine grove at Scotts. A

reunion of the descendants, old neighbors and relatives of Capt. Harrison Rugg was held at Sullivan on Wednesday. At North Sutton Rev. Dwight Spencer preached an Old Home sermon Sunday morning, and a reunion service was held in the evening. An Old Home Week association at Surry reported its organization to the state association but no account of a celebration there has been received.

TEMPLE.

President, Willie W. Colburn; vice-presidents, Herbert O. Hadley, John E. Colburn; secretary, Nahum A. Child; assistant secretary, Miss Maud E. Fiske; treasurer, James M. Holden; executive committee, James P. Tuttle, Arthur F. Rockwood, John W. Edwards, Ernest G. Dumas.

Several bonfires on Fisk hill celebrated the coming of Old Home Week to Temple. On Wednesday the fifth annual reunion and basket picnic was held at the Center, commencing at 10 a. m. for a social greeting. After dinner there was music, addresses by Hon. George A. Marden of Lowell, Mass., and others, and sports of various kinds.

TROY.

Monadnock lodge, A. F. & A. M., kept open house on Monday evening, the occasion being the Masonic Old Home Day reunion. On Wednesday the town was beautifully decorated and a basket picnic was held at the Wadsworth grove.

At one o'clock Hon. Franklin Ripley, president of the day, called the assemblage to order and after a few cordial words of welcome called for short addresses from Rev. Dighton Moses of Unionville, Ct., a former pastor, L. E. Tilden, of Washington, D. C., William Butler of Arlington, Mass., Rev. S. H. McColleston and Hon. Levi Fuller of Marlborough, Rev. F. C. Wright and H. S. Kimball of Troy. Mrs. Mary A. Saben of Winchester read an original

poem, composed for the occasion, and Mrs. Belle Page of Fitchburg read one composed by Mrs. Alma L. Crandall of East Dorset, Vt. Many who were unable to be present sent letters of regret, several of which were read. Among those who sent letters were Hon. Carroll D. Wright, U. S. Commissioner of Labor, a former school teacher, Rev. F. W. Oakes of Denver, col., Dr. C. S. Caverly of Rutland, Vt., H. J. Brown of Cleveland, O., Rev. D. W. Goodale, Suffield, Ct., and Rev. W. P. Clancy of Northampton, Mass.

The Marlborough brass band, 20 pieces, C. F. Hayes, leader, furnished music for the occasion, which was highly appreciated and added much to the enjoyment of the day. At the close of the exercises in the grove the people returned to the village, where the annual inspection and parade of the fire department took place.

The committee in charge of the day's programme was composed of H. L. Barnard, C. W. Whitney and W. W. Kimball.

In the evening the annual Moore-Wright school reunion was held in the town hall and the name of the association was changed to the Troy High School association, I. O. Wright being elected president.

WAKEFIELD.

On Saturday of Old Home Week, August 22, the town of Wakefield dedicated the beautiful library building presented to the town by Mayor Seth Low of New York City in memory of his mother, a native of Wakefield.

Abbott Dow presided over the formal exercises and Rev. A. H. Thompson invoked the divine blessing. Mayor Low presented the building to the town through the trustees, response for whom was made by Mrs. Arthur H. Paul. Rev. Mr. Foss delivered the address of the occasion and Dr. A. P. Chesley of Concord the poem. The benedic-

tion was pronounced by Rev. Mr. Eames. A reception followed.

WALPOLE.

Walpole's fourth Old Home Day, on Tuesday, was combined with the 150th anniversary of the settlement of the town. The weather was auspicious and the attendance large. A concert by the Walpole band opened the day, followed by a game of out-door basketball in which Putney, Vt., defeated Walpole. The exercises in the hall at 11 o'clock opened with prayer by Rev. W. L. B. Collins. Hon. T. N. Hastings gave the address of welcome and a ladies' quartette sang. The historical address of the occasion was delivered by Prof. Franklin W. Hooper of Brooklyn, N. Y. Other speakers were Judge Henry E. Howland of New York, Canon Bryar of Garden City, L. I., and Jerome F. Manning, Esq., of Lowell, Mass. Rev. W. S. Nichols gave the closing prayer. After lunch athletic sports were in order, and in the evening fireworks and a ball.

WASHINGTON.

President, J. Frank Crosby; vice-presidents, I. W. Curtice, Ira Brockway; secretary, S. N. Ball; treasurer, George S. Trow; executive committee, I. W. Curtice, A. T. Wright, Mrs. Julia Duncan.

A large party ascended Lovell Mountain in Washington on Saturday night, kindled a huge bonfire there and counted 17 other beacons. On Tuesday the fourth annual Old Home Day gathering was held, opening with a band concert in the morning. Following the concert Rev. C. V. French called the gathering to order and gave an address of welcome to which W. W. Hall of Unity responded. Rev. W. H. Dowden gave the address of the morning, and the venerable Charles H. Lowell read a poem. Baseball was

played before and after dinner, and a very interesting display of ancient and historic articles was made in the town hall. The afternoon programme was as follows: Invocation, Rev. Mr. Wyman of New York City, addresses, Prof. J. T. Goodwin, Hon. Ira Bradford, Rev. Mr. Miller of Westford, Mass., poems by Mr. and Mrs. Greenwood, Hillsborough, and Charles H. Lowell, and singing by Farnsworth brothers of Walpole.

WEBSTER.

Webster celebrated Old Home Day Friday for the fourth successive year. This year the celebration was in the old meeting-house in consideration of its historic associations. The church was built in 1791, the father of Daniel Webster being on the building committee. It was the only church in town until 1826.

The building was remodeled a year ago and marked with a bronze tablet over the door, giving the date of erection. The grounds and cemetery are in charge of the Old Home Week association and have been greatly improved under its care.

The exercises were held in the upper hall, which was beautifully decorated with autumn leaves. Dr. Little, president of the association welcomed all. Letters were read from many former residents, including C. H. Sweat of Minneapolis, Luther B. Little of New York, and John P. Abbott of Antioch, Cal.

H. E. Delmont of Boston sang several solos and a poem, "When the Neighbors Call You by Your Given Name," written by Luther B. Little, was read by the secretary. Hon. Walter Sargent of Warner and Henry H. Austin of Boston spoke.

Following the literary exercises a ball game between Webster and Boscawen attracted a large number, the former winning 12 to 8.

WENTWORTH.

President, J. B. Foster ; secretary, Persis Plummer ; executive committee, J. Everett Foster, Charles Merrill, Fannie B. Boyd, Calvin T. Shute, Joseph M. Bedell.

Wentworth began its Old Home Week celebration Monday night with a huge bonfire near the home of Capt. Thomas F. Clifford, which was surrounded until the last sparks had died out.

Wednesday evening there was a largely attended concert and ball at the town hall.

Owing to the severe rainstorm which prevailed all through Thursday morning, the programme as mapped out was postponed until afternoon. The noon hour brought a large number together for dinner at the hall, where a generous repast was in waiting.

The exercises proper were held in the town hall in the afternoon. Ex-Senator Rufus Blodgett of New Jersey and the Hon. Charles H. Turner of Washington, D. C., familiarly known as "Iceman Turner," a former member of the house of representatives from New York, both natives of Wentworth, delivered the principal addresses. Remarks were also made by Capt. Thomas F. Clifford and by other summer visitors. An historical sketch of the town was read by Elmer Lyon and an Old Home Week poem by Mary M. Currier. In the evening a social, a promenade concert and a musical and literary programme concluded the exercises of the day.

WEST CONCORD.

The West Congregational church society at West Concord held a fourth annual special Old Home Sunday service which was of peculiar interest. The church interior was profusely decorated with flags and flowers, among the floral designs being the mottoes, "Old Home Sunday," "Hope in God," and "Be of Good Courage," which were

made and presented by one of the oldest women in the city, Mrs. Chandler Eastman.

In the congregation which crowded the edifice were many aged people, among whom were Moses H. Farnum, aged 93; Mrs. Eliza Morse, 86; Sylvester Dana, 86; Timothy Carter, 83; Deacon Barnett and F. J. Emerson, 79. People were present from every ward in the city, as well as from Manchester, Mass., Lynn, Lawrence, Boston and Somerville, and a dozen New Hampshire towns.

A chorus of 20 voices sang "Coronation," "Lenox," "Jerusalem, My Glorious Home," and other hymns from Father Kemp's "Old Time Songs," and solos were rendered by O. W. Crowell, who directed the chorus. The pastor of the church, the Rev. H. M. Goddard, delivered an address, including a brief history of the church society, which was organized in 1834. A social hour followed the regular service, when relics, portraits and the pulpit of the old church, which was built 70 years ago, were inspected with much interest.

WESTMORELAND.

This town observed its fourth Old Home Day Thursday. The rain in the morning prevented the gathering in the grove and the people came together in the town hall. The programme was an interesting one and included music by the orchestra and a large chorus of singers under the leadership of Hon. W. J. Read. It being the 151st anniversary of the giving of the town charter, a valuable historical paper was read by Mrs. Ella P. Abbott of Somerville, Mass., who is collecting material for a town history. Addresses followed by George S. Aldrich, Hon. William J. Reed, George J. Bennett, Dr. J. A. Craig and Willard Bill, Jr. The occasion was full of interest and considered a real success. Athletic sports followed on the common, in which old and young joined.

WINCHESTER.

At Winchester the exercises of Old Home Week began Sunday night with a union service in the town hall, at which Rev. Frederick L. Priest, D. D., of Chicago, preached a sermon on the text, "Quit you like men; be strong." During the evening scripture was read by Rev. C. J. Harris, prayer offered by Rev. Julian Buffum, and music was rendered by a choir representing the three churches.

Wednesday's diversified programme included baseball, band concerts, a clambake and dancing, in addition to the literary exercises. D. C. Stearns was president of the day and happily introduced the speakers. Rev. C. F. Roper gave the address of welcome and invocation, and Dr. Leach of Keene gave a short address. The principal address of the day was delivered by Rev. F. H. Buffum. Other speeches were made by Joseph Doolittle of Troy, George F. Tinker of Connecticut, Drs. G. C. Hill and Ira W. Russell of Keene, and Olan Wardwell of Baldwinsville, Mass. Rev. Julius F. Buffum read an original poem. The speaking was interspersed with singing by a mixed quartette and selections by the band.

WOLFEBOROUGH.

President, Sewall W. Abbott; vice-presidents, Charles F. Piper, James H. Martin; secretary, Fred W. Prindle; treasurer, Almon W. Eaton; executive committee, Edwin H. Lord, Joseph T. Meader, Wilbra H. Swett, Edward F. Cate, Henry F. Libby.

At Wolfeborough Old Home Week was ushered in with big bonfires on Cripple Crown mountain and other elevations. Special religious services were held Sunday.

Monday evening there was a concert and ball in Brewster Memorial hall. Old Home Day, Tuesday, was ushered

in by an artillery salute at sunrise, which was repeated at noon and sunset. The church bells were also rung at the same hours.

At 9.35 a. m. there was a parade of decorated power boats in Wolfeborough bay, passing in review in front of the steamer landing, where the judges were stationed. At 11 a. m. there was a series of races between power boats.

At 1 and 1.15 p. m. there were running matches, and at 1.30 public exercises in a large tent, as follows: Concert by band, invocation by Rev. Orin D. Fisher, address of welcome by Mabel E. Fullerton, music, address by Hon. John C. Bickford of Manchester; singing of "Home, Sweet Home," by the audience, led by the quartette.

At 2.30 p. m. there was a ball game on Brewster campus between the Wolfeborough and Idlewild nines, won by the former, 5 to 3.

Following the ball game came aquatic events in the bay, including companion race, canoe race and 50-yard swimming contest.

In the evening at 6.45 there was a tight rope walking exhibition, and at 7 a band concert with a general illumination of the town.

WOODSTOCK.

President and secretary, Elmer E. Woodbury; treasurer, John A. Gray; executive committee, E. E. Woodbury, A. W. Sawyer, D. B. Barstow.

In the observance of Old Home Day the people of Woodstock were warmly supported by the hundreds of summer residents of the Pemigewassett valley on Wednesday, and every one kept open house. At noon a basket picnic was held. In the afternoon at Fairfield park, a large assemblage listened to the literary exercises. Dr. Ernest L. Bell presided, and there were addresses by the Rev. Dr. Perkins of Woodstock, Prof. Karl P. Harrington

of Orono, Me., Prof. Charles H. Raymond of Lawrenceville, N. J., Col. Horace N. Fisher and Prof. Frank O. Carpenter of Boston, and William Wells of the Russell House. Prayer was offered by the Rev. Dr. Conrad.

At Waterloo a beacon blazed on Monument hill Saturday night, and from beside the great blaze on Kearsarge 26 other fires could be counted. A heavy rain storm forced the abandonment of the Old Home Week exercises at the Wilmot Campground, but in the evening the North Wilmot Progressive club gave an enjoyable entertainment in the town hall. The 14th annual reunion of Company C, 16th N. H. Vols., was held at Wilton on Thursday of Old Home Week. At Windham a Sunday school picnic was held at Corbett's pond on the opening Saturday of the week. The Weare association kept up its organization, though no celebration was held in 1903.

OFFICERS FOR 1904.

President.

FRANK W. ROLLINS	.	.	.	Concord.
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Vice-Presidents.

JOSEPH B. WALKER	.	.	.	Concord.
JOSEPH D. ROBERTS	.	.	.	Rollinsford.
CHARLES B. HOYT	.	.	.	Sandwich.
CHARLES MCDANIEL	.	.	.	Springfield.
T. NELSON HASTINGS	.	.	.	Walpole.
ELMER E. WOODBURY	.	.	.	Woodstock.
GORDON WOODBURY	.	.	.	Mancheester.
TRUE L. NORRIS	.	.	.	Portsmouth.
RICHARD PATTEE	.	.	.	New Hampton.
CHESTER B. JORDAN	.	.	.	Lancaster.

Treasurer.

HARRY H. DUDLEY	.	.	.	Concord.
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Secretary.

NAHUM J. BACHELDER	.	.	.	Concord.
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Executive Committee.

EDWARD N. PEARSON	.	.	.	Concord.
WILLIAM H. STINSON	.	.	.	Dunbarton.
HENRY H. METCALF	.	.	.	Concord.

OFFICIAL INVITATION.

To Absent Sons and Daughters of New Hampshire :

We invite you to visit New Hampshire and view the scenes of youthful days. As you look upon the mountains and lakes and streams, which alone remain unchanged, old-time experiences will come fresh to mind. Whether the old homestead is still occupied by kinsmen, used by others in modern farming or, having passed into the hands of adopted citizens, become a summer home, you will find a cordial greeting awaiting you.

We invite you not to old New Hampshire, but to new New Hampshire. Come and travel the roads we are constructing, gaze upon the forests we are preserving and enjoy the fish and game now being protected and propagated. By improving our rural schools, fostering our country churches, encouraging worthy organizations and promoting up-to-date agriculture, rural development is progressing in the state in a marked degree. Come and see new New Hampshire.

Our greeting will be expressed by the fires on the old hill tops, flaming from peak to peak our great joy at your return; by attending church in the old meeting-house on Old Home Sunday: by assembling in more than a hundred towns on Old Home Day to give you the glad hand; and by placing chairs for you around the hearthstones in all our homes; assuring you that old-time hospitality still prevails in the hearts and homes among the hills and valleys of the Granite State.

NAHUM J. BACHELDER,
Governor.

By His Excellency the Governor, with the advice of the
Council,

EDWARD N. PEARSON,
Secretary of State.

TOWN AND CITY OBSERVANCES.

ACWORTH.

President, H. N. Hayward; vice-presidents, H. G. Perham, R. J. Carey, G. W. Buss; secretary, Myra Chatterton; treasurer, Minnie E. Chatterton; executive committee, Nellie L. Woodbury, Almon E. Clark, Guy S. Neal.

More than 600 people assembled at Acworth on Friday of Old Home Week, returning sons and daughters coming from as far away as western New York and Florida. The morning was devoted to a social reunion. A picnic dinner was enjoyed at noon, lunch being served for the visitors, and in the afternoon William H. Mitchell, president of the day, conducted the following programme: Prayer, the Rev. Mr. Rockwood; poem, Mrs. T. White Osgood; address, H. D. Ryder, Bellows Falls, Vt.; song, Miss Mary Louise Woodbury; violin solo, Dr. E. G. Cummings, Concord; violin solo, Allen Hayward Gilsum; song, "Old Oaken Bucket," audience; addresses, Mrs. Mary L. Bowers, Bellows Falls, Vt.; H. H. Metcalf, Concord; Andrew Mitchell, Lempster; Mrs. Copeland Harris, Methuen, Mass.; George Bailey, Acworth; Prof. George Winch, Manchester; Walter Barney, Florida; Crawford Barnard, Rochester, N. Y.; Charles Gove, Rochester, N. Y.; Dr. A. R. Cummings, Claremont; George A. Cummings, Concord; letters of regret from Dr. C. A. Brackett, Newport, R. I.; E. M. Kempton, Newport, and many others; closing song, "America," audience.

ALEXANDRIA.

At Alexandria the third Old Home celebration was held on the village green on Tuesday, Aug. 23. In the forenoon the gathering was devoted to renewing old acquaintances and forming new ones. At noon parties could be

seen here and there gathered around well-filled lunch baskets. At 2 p. m. Miss Eva L. Phillips, master of Cardigan grange, called for order, and after a selection by Bristol Cornet band, Rev. A. Linfield offered prayer. The address of welcome was given by Mrs. Eva L. Phillips, which was responded to by H. Taylor Heath, lecturer of Lake and Valley Pomona grange. The following programme was presented: Music, band; reading, Harry Rollins; song, Angie Gale; reading, Mrs. Lillian Wells; historical sketch, A. F. Cheney; reading, Mrs. Laura Emery; music, band; address by George R. Drake, secretary State Grange, Manchester, Hon. Ira A. Chase, Bristol; songs, D. B. Plumer, Briarcliff, N. Y.; addresses, Prof. F. L. Pattee, State College, Pa., Richard Pattee, Ashland, lecturer State Grange, Rev. D. E. Burns, Moultonborough, Rev. D. M. Phillips, Strafford, Zabina Woodbury, Wellesley, Mass., Rev. Adolphus Linfield, pastor of the M. E. church. In the evening there was a dance and promenade at the town hall. About 500 people were present. The day was the finest of the season, and all enjoyed themselves.

AMOSKEAG.

Amoskeag, "the mother of Manchester," celebrated on Saturday, August 20, and the drenching downpour of rain compelled the abandonment or postponement of some of the features of the observance. Dinner was served to 500, however, and was followed by most interesting exercises, presided over by United States Senator Henry E. Burnham, who was introduced by Miss S. Anna Stearns, president of the Old Home Week association. The programme was as follows: Address of welcome, Hon. Henry M. Putney; response, Col. W. H. D. Cochrane, Nashua; letters of regret read by Irving C. Forbes; singing, "My Old New Hampshire Home," audience; original poem, "The Old Tavern," Moses Gage Shirley; song,

"Hurrah for Old New England," Mrs. M. Florence Gove; original poem, "Aunt Martha at the Well," Frank M. Frisselle; singing, "The Old Oaken Bucket," by the "Aunt Martha Chorus;" singing, quartette; "Auld Lang Syne," audience; benediction, Rev. C. C. Mitchell.

ANDOVER.

President, Henry A. Weymouth, M. D.; vice-president, Clarence E. Carr; secretary, Willis A. Shaw; treasurer, George E. Eastman.

Andover omitted for the first time a formal celebration of Old Home Day. But Rev. F. G. Chutter of Littleton preached eloquently on Old Home Sunday; and on Saturday evening George H. Moses, secretary of the state forestry commission, gave an illustrated lecture on "New Hampshire out of Doors."

ATKINSON.

Atkinson's first minister was Rev. Stephen Peabody, who was ordained Nov. 25, 1772, his pastorate continuing until his death, May 23, 1819, or nearly 47 years. He was an army chaplain during the revolution.

The pulpit he so long filled was occupied on Old Home Week Sunday by his great-grandson, Rev. Harry E. Peabody of Hartford, Conn., in the 80's a star fullback on Exeter and Harvard elevens. He brought his son to Atkinson and other descendants of Parson Peabody attended the services. In the congregation was Mrs. Albert Noyes, aged 89, who was baptized by Parson Peabody, and with great pleasure heard his great grandson preach.

After the morning service the congregation marched to the old home of Parson Peabody and held a praise service beneath elms of his planting. At the evening service Mr. Peabody read extracts from his great-grandfather's diary for 1777.

Monday evening a reception was given in the chapel, to which all townspeople were invited. In the receiving line were the Rev. Mr. Peabody and son, Stephen; Mr. Clough of Merrimac, Mrs. Peabody's father, and H. N. Sawyer of the Old Home association of Atkinson.

At Alstead the Ladies' Circle gave an Old Home Week sociable on Wednesday evening with an appropriate programme, including the singing of the old home songs.

At Amherst the Harvell family held its 30th annual reunion on Saturday, the 27th, 40 members answering the roll-call.

BATH.

Thursday, August 25, the hundredth anniversary of the dedication of the church at Bath was pleasingly celebrated. A basket picnic was enjoyed on the site of the old meeting-house, which was erected during the years 1802-3-4 and dedicated in 1804, the gallery having then been completed.

Among the many present was Sherburne Sanborn of Milwaukee, Wis., a native of Bath.

On the spot occupied by the front doorsteps a rough monument was built, each one present adding a stone. Remarks suitable to the memories of time and location were made by the oldest inhabitants.

BELMONT.

President, Hon. E. C. Bean; vice-presidents, Dr. G. H. Ingalls, Jamaica Plain, Mass., C. E. Cate, Hammond, La., Hon. George W. Fifield, Lowell, Mass.; secretary and treasurer, Helen F. Hall; executive committee, Thomas Fuller, Mrs. R. G. Hoyt, F. K. Johnson, Mrs. W. C. Wells, Brock Dearborn.

Belmont celebrated her third Old Home Week Wednesday afternoon with great success. Many distinguished

former citizens were present. Hon. E. C. Bean presided over the exercises with his usual ability, and happily introduced the speakers. The chairman of selectmen, Samuel P. Philbrick, welcomed the guests in behalf of the town; Mrs. J. P. Cilley read an interesting historical sketch; Deacon Joseph Weymouth gave a bright talk on old times; J. Frank Sleeper spoke of his life in Belmont; Rev. H. E. Wyman spoke of life in New Hampshire as compared with India; James O. Lyford of Concord and B. F. Varney of Penacook were among the speakers; S. Lowell French of East Concord was received with enthusiasm by his former pupils; and others who spoke were Col. J. M. Sargent, Dr. Mason, Fred A. Currier, Rev. Mr. Phillips and Rev. E. S. Moulton. Music was by Kempl's orchestra and Miss Edith Lord, violinist. An excellent supper was served in the vestry of the South church. The evening entertainment consisted of music by the orchestra; selections by Excelsior quartette of Laconia; violin solos, Miss Edith M. Lord of Tilton, and selections by Col. John M. Sargent. Mr. A. C. Prescott of Boston, a visitor, favored the audience with a vocal solo.

BOSCAWEN.

Old Home Day was observed at the Plain Tuesday, Aug. 23, by a basket picnic followed by speaking in the church in the afternoon. Officers chosen for the ensuing year were as follows: President, E. Raymond; treasurer, G. W. Fisher; secretary, F. L. Gerrish; executive committee, Edson Mattice, E. A. Griffin, Mrs. E. P. Carter. Remarks were made by Prof. John H. Larry, Hon. John C. Pearson and J. H. Jackman. Among those present from out of town were representatives of all the New England states, Tennessee and Texas.

About 60 of the former pupils of Boscawen (Elmwood) academy met, with their former popular teacher, Mrs.

Ellen J. LeGro Tenney, Friday, Aug. 19, at Contoocook park, Penacook.

After dinner President Warren Abbott made brief remarks and read letters from "Charlie" Ames of Boston; George A. Burge of Nashua, and A. L. Smith of Worcester, Mass.

Remarks were made by Mrs. Tenney; Dr. Goodhue, Springfield, N. H.; Captain Macurdy, H. F. Pearson and J. L. Gerrish of Webster; Mr. and Mrs. Charles Rolfe, Abial Rolfe, Joseph Rolfe and Fred L. Chandler of Penacook; Mrs. Daniel Webster and Mrs. Julia Carroll of Boscawen; Miss Mary Sleeper, Lexington, Mass.; Mrs. Emma Bauffman of Indiana; and Miss Lydia Farnum of West Concord.

At the business meeting it was voted that the next meeting be held at the old academy building at Boscawen in August, 1906. The following officers were chosen: President, George L. Pillsbury; secretary, Mrs. Mary A. Durgin; treasurer, Warren Abbott; executive committee, Mrs. Mary Hardy, Mrs. Esther Fisher and Mrs. Sarah Allen.

Bow.

President, Henry M. Baker; vice-presidents, Walter Putney, Charles B. Rogers; secretary, Edwin A. Colby; treasurer, Frank A. White; executive committee, Robert W. Upton, Warren C. Saltmarsh, Sterling A. Colby.

Baptist and Methodist clergymen united in Old Home Sunday services in the beautifully decorated Baptist church. Thursday was Old Home day, with baseball, band concerts and literary programme. The affair was held in Hammond's grove on Wood hill, and was well attended by out-of-town guests. An excellent concert was given by Runnell's band and the following programme carried out: Invocation; welcome song, choir; remarks, the president; addresses, the Rev. Mr. Larramour and the Rev. Mr. Law-

rence ; selection, band ; historical address, Sherman E. Burroughs ; poem, Maud Putney ; selection, band ; address, the Rev. C. L. Page ; addresses by former residents of the town and others ; election of officers and miscellaneous business ; "America," choir and band ; national airs, band.

BRIDGEWATER.

President, Sherman S. Fletcher ; secretary, David T. Atwood ; executive committee, Albion B. Dalton, Arthur H. Morrill, Winfred W. Gilpatrick, Austin S. Garver.

Bridgewater on August 25th celebrated the 100th anniversary of the laying of the corner stone for its first meeting-house in connection with its Old Home Day celebration.

The exercises were held on the site of the old building, which long since was converted into the town house. Dinner was served to 400 in the adjoining grove.

The morning hours were devoted to social gatherings and a baseball game. The afternoon programme was long and varied, comprising these features : Solo, Mrs. William Fuller of Fall River, Mass. ; address, the Rev. A. S. Garver of Worcester ; history of the Bridgewater town house, written by Miss Augusta Sargent and read by Dr. Garver ; poem, Elizabeth Patterson Whettmore, read by Mrs. Joseph Morse ; address, Frank J. Barnard of Boston ; address, Fred A. C. Nichols of Sacramento, Cal. ; solo, Charles Spencer ; address, C. W. Johnson of Boston ; reading, Mrs. Scott Fletch of Laconia ; address, P. B. Smith of Plymouth ; address, Joseph Boardman of Boston ; address, Luther B. Pillsbury of Somerville ; solo, Mrs. William Fuller of Fall River ; singing of "America" by the audience.

In the afternoon a quilt with about 800 autograph names including those of scores of old residents and those of state officials was sold at auction to Cyrus Fletcher, who is a great-great-grandson of Joshua Fletcher, the first settled minister at the old church.

BROOKLINE.

President, Clarence R. Russell; vice-presidents, Orville D. Fessenden and the Rev. George Bennett; secretary, Ella W. Tucker; treasurer, Samuel Swett; executive committee, Alpha H. Hall, Frank L. Willoby and Frank P. Kennedy.

Friday was the big day in Brookline's celebration of Old Home Week. During the day an excellent programme was carried out, and in the evening a grand concert and ball was given, which was largely attended and proved a very gratifying success.

The programme of literary exercises was carried out in the Congregational church. The day's entertainment was as follows: 9.30 a. m., concert by the Ashby band; 11, at the Congregational church, selection, band; invocation, the Rev. George A. Bennett; address of welcome by the president, Clarence R. Russell; response, Morton A. Klein; song, choir; oration, the Rev. George L. Perin of Boston; song, choir; poem, Judge Edward E. Parker; song; 12.30 p. m., dinner at Tarbell's hall, followed by brief toasts and remarks by former residents; 3, ball game; 5, band concert.

At Bristol the five churches of the town united in an Old Home Week service at which the preacher was Prof. Fred Lewis Pattee of the Pennsylvania State college.

The descendants of John Cate 1st held their 29th annual reunion in Barrington on Thursday of Old Home Week. After the business meeting a literary programme was given.

Narragansett Grange, No. 46, P. of H., of Bedford, held its annual picnic on Wednesday of Old Home Week at Pine Island park, Goff's Falls.

CAMPTON.

President, Edward H. Cook; first vice-president, Henry M. Fifield; secretary, Clarence W. Malley; treasurer, Austin G. Simpson.

At Campton Wednesday the celebration began with a sunrise salute and lasted until well into the evening. On the arrival of the morning train at the Campton station, a parade was formed under the command of Chief Marshal Henry M. Fifield of Campton Village, and moved over a mile and a half course to the grove at "the Hollow," a beautiful stretch of pine woodland. The procession was one of the features of the day, and was a half-mile long.

Over 1500 people assembled at 10 o'clock, when the secretary of the Campton Old Home Week association, Clarence W. Malley, introduced David B. Pulsifer, an old and honored resident, as president of the day. After music by the band and an invocation by the Rev. L. S. Lewis of Laconia, a chorus of school children sang "When the Stars are Shining Brightly." The welcome was read by Mrs. Little, owing to the unavoidable absence of F. Schuyler Mathews.

The Hon. George A. Littlefield of Providence, an adopted son of Campton, who has made a mark in New England legal circles, delivered the first address, being followed by the Hon. Charles A. Jewell of Boston, a former naval officer at that port, and Gen. George H. Adams of Plymouth, prominent in New Hampshire legal and political circles, both natives of Campton. The Rev. Quincy Blakely of South Glastonbury, Ct., a native and son of a former Campton pastor, spoke at length.

Solos were effectively rendered by Mrs. Mary Sprague Catlow and Frank O. Bryar of Providence, and A. B. Chase of Galveston, Tex. Old Home Day poets were conspicuous, poems being contributed by Elbridge Homans, Mrs. Martha Merrill Shute and Col. Walter M. Rog-

ers of Boston. Letters were read by the secretary from many prominent natives of Campton, among them ex-United States Senator Henry W. Blair, James Milton Flint, Washington, D. C.; Ernest W. Dow, Missouri; Nettie F. Smith, Philadelphia; Samuel Hopkins Willey, California; Justin E. Cook, Independence, Ia.; George K. Thornton, Beverly, Ia.; Susan Taylor Converse, Woburn, Mass., and William B. Durgin of Concord. The audience sang "Home, Sweet Home," and at the close of the exercises all gathered close to the speaker's stand and sang "Auld Lang Syne."

A basket picnic dinner was served in the grove at the noon hour, one of the special dishes upon the menu being beans baked in the ground in genuine old New England style. Over 1000 persons were served. The afternoon was passed in renewing old acquaintances, while the young folks indulged in some of the games of the olden time, being coached in their art by the older generation. Prof. Henry Wyatt of Chattanooga, Tenn., entertained with old time songs. The Keniston band was present and rendered selections throughout the day.

In the evening the scene of the celebration was transferred to Campton Village, where about 500 gathered upon the lawns of the Baptist church. An informal reception was given the visitors by the townspeople, and the band gave an open-air concert. On the part of the residents hospitality was generously extended, open house being kept by all.

CANAAN.

The first display of Old Home spirit in Canaan took the form of a very largely attended meeting of Indian River grange on Saturday evening, at which the following programme was carried out: Music, choir; address, Congressman F. D. Currier; duet, Mrs. C. M. Murray and

Mrs. B. A. Goss; "Canaan, Its Natural Advantages," W. H. Smart; song, "The Old Oaken Bucket;" original poem, written by LeRoy Smart of Cambridge, Mass.; sketches of prominent men born in town, C. O. Barney; original poem, written by George W. Parker of Springfield, Mo.; harmonica solo, E. M. Allen; quartette, "Come Where the Lilies Bloom;" remarks by Judge William M. Chase and other guests; song, "Auld Lang Syne;" benediction, the Rev. H. F. Quimby.

CANDIA.

President, J. Lane Fitts; vice-presidents, Edwin J. Godfrey, George F. Cass, Jonathan Hobbs, John A. Holt, I. F. Underhill; secretary, Mrs. Adella Allen; treasurer, George F. Patten; executive committee, Henry Moore, Frank S. Allen, Charles H. French.

Candia had a dual celebration. Thursday was Old Home Day, but it was preceded on Wednesday by the semi-annual reunion of the Candia club, mainly composed of former residents now living in Boston and vicinity.

The club formally presented to the town a granite watering trough, placed near the depot, beneath a large elm. The presentation was made by Sam W. Foss, poet and humorist, public librarian of Somerville, Mass. It was received by Edward L. Rowe, chairman of the board of selectmen.

Dinner was followed by interesting exercises, which included an address on "Some of the Old Queer Characters I have known," by Luther W. Emerson, New York. Judge David Cross of Manchester, spoke on the late Deacon Francis B. Eaton, of Manchester, a former native of Candia. President Dr. L. J. Young, of the club, made a brief address, and there was a solo by Mrs. Hattie A. L. Walker of Haverhill, Mass. An original poem was read by Sam W. Foss, having been written by him on the train

on his way from Somerville to Candia. Other addresses were made by Frank W. Sargent of Manchester, and the Rev. John S. Curtis.

On Thursday the Oakland orchestra opened the exercises with a fine selection, followed with prayer by the Rev. T. C. Pratt. The Rev. J. S. Curtis gave the address of welcome. Letters were read by the president, J. Lane Fitts, from those unable to be present.

The Rev. Mr. Thompson of Raymond gave a very interesting talk in place of the Rev. Franklin French of Londonderry, who was unable to be present until later in the day. A letter and poem from J. Henry Worthen, Haverhill, Mass., was read by Henry H. Hubbard.

At 12 o'clock all adjourned to Page's grove for lunch and further exercises. At 1.30 o'clock J. L. Fitts, the president, called the audience to order. Short speeches were made by Dr. Reynolds of Kingston, Luther W. Emerson of New York, Wilson Palmer and Sam Walter Foss, followed by five-minute speeches by townspeople. Music was interspersed, including solos by Mrs. Addie T. Blake, Manchester, and Mrs. Hattie A. L. Walker and Henry A. Hubbard. The Candia Village choir sang two selections. Henry French of Hudson, Mass., a former townsman and native of Candia, sang two solos, followed by remarks that very pleasantly brought before his old friends memories of the past.

A ball game between Chester and Candia was in progress in a field not far distant which was very much enjoyed, Candia winning.

CANTERBURY.

No official town celebration was held in Canterbury, but two interesting reunions were features of Old Home Week.

The annual reunion of the Cogswell family and of people who at one time or another attended the district

school at Hill's Corner was held at Uplands Thursday. Over 150 were present and the occasion was a pleasant one including a fine programme of musical and literary exercises and a delightful reunion of old school friends. William M. Cogswell of Tilton, the president of the association, presided, and the following programme was presented: Singing, mixed choir; remarks, Hon. James O. Lyford of Boston; remarks, Senator E. C. Bean of Belmont; reading, Col. J. M. Sargent of Belmont; reading, Mrs. Colman of Canterbury; vocal solo, Mrs. C. L. True, Tilton; song, Miss Doris True of Tilton (two years old); singing, mixed chorus. Last years' officers were re-elected.

The annual meeting of the Ayers association was held at the home of the president, Charles H. Ayers in Canterbury. The weather was all that could be desired, the company assembled were congenial, and nothing occurred to mar the happiness of the occasion. Harry G. Clough was chosen president for the next year, the other officers remaining the same.

CENTER HARBOR.

President, Daniel W. Coe; vice-presidents, Rev. John Thorpe, Benjamin M. Smith, Beverly, Mass., Rev. Robert L. True, Lowell, Mass., R. H. Sturtevant, Somerville, Mass., George L. Huntress, Boston, Mass.; secretary, A. Chester Clark; treasurer, Edgar W. Smith; executive committee, Daniel W. Coe, A. Chester Clark, Albert E. Hutchins, Mrs. H. C. Sturtevant, Frank H. Morse.

The town of Center Harbor conducted a very successful observance of Old Home Week. The intention was to usher in the week with bonfires Saturday evening, but on account of the heavy downfall of rain, this part of the programme was omitted. Sunday proved much more auspicious as far as weather was concerned, and the events of

the day were carried out. In the forenoon an Old Home service was held at the Congregational church with an eloquent sermon by Rev. John Thorpe, chaplain of the New Hampshire State grange. Mr. Thorpe's subject was "The Relation of the City to the Country." In the evening a layman's service was held, at which a number of brief addresses were made. During the day the music was in charge of Frank H. Morse and was in keeping with the occasion.

Monday was notable on account of the visit of ex-President and Mrs. Cleveland.

Tuesday was Old Home Day. In the forenoon a ball game between Center Harbor and Meredith resulted in a victory for the former. In the afternoon Old Home Day exercises were held in Independence hall, and the following programme was carried out: Overture, Center Harbor Cornet band, Louis P. Kelly, leader; Prayer, Rev. John Thorpe; address of welcome, Orville P. Smith, chairman board of selectmen; response, Benjamin M. Smith, Beverly, Mass.; vocal solo, Stanley R. Fisher, Boston, Mass.; address, Dr. J. A. Greene, Moultonboro; selection, band; reading, Mrs. Edward W. Coe; address, Prof. James M. Chapman, Miami university, Oxford, O.; Old Home Day poem, Rev. John Thorpe; singing, Old Home Day ode, written by Mrs. M. L. Hanson; address, Hon. Samuel L. Powers, congressman from Massachusetts; address, Rev. Asa R. Diltz, Lowell, Mass.; selection, band.

CHESTER.

President, George A. Hosley; vice-presidents, W. B. Underhill, W. I. Martin; secretary, Francis E. Robie; treasurer, George S. West.

The Old Home Week exercises in Chester opened Sunday morning with an appropriate sermon by Rev. James G. Robertson, pastor of the Congregational church, the

church being filled. In the evening services were again held in the church, during which several reminiscent addresses were delivered by past and present residents of the town.

On Monday 6,000 people witnessed the dedication of the new soldiers' monument. The event was carried out in connection with the Old Home Day exercises, and many former sons and daughters of the town were in attendance. The gathering was one of the most notable in the history of the town. Many of those present came from distant parts of the country, and there were a number of family reunions.

The dedication of the monument was the chief feature of the day's doings. Col. George A. Hosley was president of the day, and Chairman George S. West of the selectmen presented the monument to Bell post, G. A. R. Department Commander Henry O. Kent received it in behalf of the G. A. R., the ritual of the order being performed. Ex-Congressman George C. Hazelton of Washington, D. C., a native of Chester, delivered an historical address. United States Senator Henry E. Burnham, Congressman Cyrus A. Sulloway of Manchester, Col. John C. Linehan and Henry F. Hollis of Concord, and Corporal Tanner of the G. A. R. made brief addresses.

The monument is of granite, 18 feet high, surmounted by the figure of a soldier with his gun at rest, also in granite. The inscription "In Honor of Our Country's Defenders, 1861-1865," is on the side. Besides the names of 22 from this town who were killed in the Civil War there are inscribed the names of 80 others who are still living. At night there was a band concert and fireworks display.

CHARLESTOWN.

President, Stephen T. Searle; vice-presidents, Rev. Lucius Waterman, D. D., Willifred E. Hunt; secretary,

Mrs. E. L. Soper ; treasurer, Wesley Fisk ; executive committee, Mrs. H. E. Corbin, Timothy Callahan, Dr. Lucius K. Thayer.

On Sunday evening, August 28, a union memorial service was held in the town hall with sermon by Rev. C. A. Knickerbocker of White River Junction, Vt.

On Monday evening Miss Mary C. Pratt and the pupils of her once famous private school enjoyed a reunion in the parish house.

Tuesday found the village beautifully decorated and filled with visitors. In the forenoon a reception was held at the town hall where, also, was a rare exhibit of colonial relics. E. K. Morrison of Acworth gave a historical address.

After luncheon the state society of Colonial Wars dedicated a huge boulder bearing a bronze tablet, with this inscription: "This boulder from the hillside is set here by citizens of Charlestown with the co-operation of the Union historical society of Charlestown, N. H., and Springfield, Vt., and of the society of Colonial Wars in the state of New Hampshire, to mark the site of the old fort built in 1743, being the 150th anniversary of the Indian raid."

The exercises at the monument included music by the band ; poem of welcome by Col. Samuel Webber, read by Rev. C. R. Bowen ; address of welcome by Stephen T. Searle, president of the Old Home Day association ; response by John C. Thorne, governor state society of Colonial Wars ; prayer of dedication, Rev. E. T. Blake ; unveiling of monument by Miss Harriet P. Stevens, great granddaughter of Capt. Phineas Stevens who with his band of 30 heroes successfully defended the fort against a force of French and Indians twelve times their number ; poem, "Then and Now," read by H. P. Saunderson, Manchester, closing with an address by Hon. John C. Linehan of Concord.

In the evening the town hall was packed to the doors at a grand ball managed by G. L. Richardson, chairman of the board of selectmen.

CHICHESTER.

President, Charles E. Garvin; vice-presidents, Charles A. Langmaid, George M. Munsey; secretary, John L. T. Shaw; treasurer, Jeremy L. Sanborn.

Chichester's third annual Old Home Day was held in Langmaid's grove on Tuesday.

The people began to assemble early in the morning, and the forenoon was passed in renewing old acquaintances and playing the old-fashioned games such as skittles, quoits, etc. At noon a genuine Rhode Island clambake was served free to all, as were also baked beans which were baked in the ground in that famous old bean hole. The association also furnished lemonade and coffee to all, and souvenir napkins.

After the wants of the inner man had been abundantly satisfied the literary exercises were held in the grove, and were in charge of Col. True Sanborn. After a prayer by the Rev. Mr. Downs speeches were made by Charles Burrell, president of the Old Home Week association of Hull, Mass.; Colonel Locke of Malden, Mass., and other former residents of the town.

One feature of the afternoon's exercises was the old-fashioned singing school that was in charge of Joshua Lane of Concord, a former singing school teacher, all of the singers being his former pupils. Music was also furnished by Nevers's orchestra of Concord.

At the conclusion of the literary exercises a baseball game was played between the Pittsfields and Chichesters.

Mrs. Thomas Barry, 94, was the oldest person present, and the longest absent son was Andrew Edmunds, now of Stratham, who had not been in town before for 40 years.

CONCORD.

President, Joseph B. Walker ; vice-president, Charles R. Corning ; secretary, Henry H. Metcalf ; treasurer, Harry H. Dudley.

Concord's sixth annual Old Home celebration was held Wednesday at Contoocook River Park. The village of Penacook, in which the park is located, was elaborately decorated with flags and bunting, many homes displaying appropriate mottoes. Fully 10,000 persons visited the park during the day, and at noon many hundreds ate basket lunches under the trees.

A vaudeville entertainment was on the programme from 1 until 2 o'clock, when the regular exercises of the day followed.

Hon. Joseph B. Walker, president of the Old Home Week association, delivered an address of welcome and introduced Mayor Charles R. Corning as presiding officer. Mayor Corning spoke briefly.

The speakers were ex-Senator William E. Chandler, Rev. Fr. T. P. Linehan of Biddeford, Me., who came to Concord when two years old, and Rev. Millard F. Johnson of Nashua, a native of Penacook. Ex-Gov. Frank W. Rollins, founder of Old Home Week, was the special guest of the day, though he did not make an address.

A band concert and aquatic sports on the river, including boat and canoe races, tub race and swimming race, followed the formal exercises.

In the evening the park was brilliantly illuminated and an illuminated parade was held on the river. For several miles up the stream cottages glowed with lights, and gaily decorated prizes were awarded for the best decorated cottages and boats.

Ex-Senator Chandler delivered an exhaustive address, which in the main dealt with Concord's new city history and paid tribute to the historians. The closing portion was as follows :

"With no desire to undervalue other dwelling places, surely all citizens of Concord and their descendants may on this Old Home Day rejoice with exceeding joy because of the splendid legacy which is theirs, in their relation to this attractive home of their revered forefathers in this most lovely valley of the Merrimac river. We have been among the builders and are the keepers of this goodly heritage. But let us not this day forget that 'Except the Lord build the house they labor in vain that build it: except the Lord keep the city, the watchman waketh but in vain.'"

CORNISH.

The 28th annual meeting of Cornish old people's association was held Wednesday at the old church, its place of meeting ever since the organization was started. The morning was devoted to a social time with a basket picnic at noon.

Of the 300 invitations sent out, every one was responded to, either in person or by letter. A local male chorus furnished the music, and the exercises opened with the reading of the Scriptures by the Rev. M. Vincent, prayer being offered by the Rev. James Knobbs. The secretary's report showed that 22 former residents had died during the last year.

The address of welcome was by George L. Deming, and the response was by the Rev. M. J. Dunklee of Andover, Mass. Other speakers were J. T. Jackson, Mrs. Ira Rowell of Claremont, the latter reading a poem; the Rev. Joseph Rowell of California, aged 85 years, who came across the continent to be present; Mrs. M. Moore, who read a poem; Col. Winston Churchill, George E. Fairbanks, the Rev. Joseph W. Wellman of Jamaica Plain, Mass., William Smith of North Carolina and the Rev. A. J. Bailey of Meriden.

At the close of the exercises the following named officers were elected: President, S. B. Comings; secretary and treasurer, William A. Childs; executive committee, William A. Childs and M. A. Walker. In the evening a reunion of the Hardy family took place and the annual public clambake. The Windsor, Vt., band furnished music.

CROYDON.

Tuesday was Croydon's day. At noon a bountiful repast was served in the town hall and was thoroughly sampled and appreciated by some 400 hungry people. The call to order in the church at 1.30 found the building packed to its utmost. A delightful programme was presented. Prayer by Rev. Mr. Estes; address of welcome, Rev. S. C. Eaton; address by Prof. Rufus B. Barton of Hillsborough, topic, "Problems of the future;" short addresses by Attorney General Eastman of Exeter, George T. Stockwell of Claremont, Hon. Wilbur H. Powers, Hyde Park, Mass.; Leroy Forehand, Iowa; George N. Smith, Nebraska; Horace Hall, Illinois; Harvey S. Ferry, New York; Mrs. Nancy Powers Adams of Fitchburg, Mass.; and others. Music by the choir and congregations was sandwiched in to enliven the hours, also a delightful solo by Mrs. Lizzie Barton Cutting of Newport.

Carroll had an Old Home Week bonfire at Pleasant View; Chesham an illumination at Silver Lake, and the annual reunion and picnic of the Farwell family. Canobie Lake park was the scene of reunions of the Bailey-Bayley Family association and the American Boynton association. At Colebrook the annual band fair was held during Old Home Week.

DEERING.

On Wednesday in Deering the people gathered in the school at 9 a. m., and prayer was offered and a Psalm read

by Rev. C. T. Matthews, a former pastor. Members of old choirs sang.

In the afternoon Benjamin L. Bartlett, president of the day, gave the address of welcome, and there were responses by Kirk D. Pierce, Esq., of Hillsborough, Hon. J. W. Grimes of Boston, Mark Manahan of Lawrence, Mass., Thomas Richardson of Lowell, Mass., Daniel Wyman of Concord, Mrs. Eunice Chase of Weare, 78 years of age, and others. Mrs. Patten of Francestown contributed a poem, and an interesting letter was read from Mrs. George A. Ramsdell of Nashua.

At Danbury the Old Home Week observance took the form as in the past years of the annual fair of the Ladies' Sewing circle.

Danville had a huge bonfire on Coleman hill, and a sermon in the ancient meeting-house by Rev. W. H. Woodman of Hampstead.

At Dalton the Scott-Lang-Harriman association, composed of descendants of these three families, held its sixth annual reunion.

At Derry the ladies of the First church held their annual fair on Thursday; as did, likewise, the ladies of the Congregational church in Dublin.

At the annual reunion of the Hall family at Central park, Dover, Thursday afternoon, 65 members of the family were present. Mrs. Annie Wentworth Baer, of Rollinsford, gave the history of the family in America. Ceylon Spinney, of Portsmouth, was elected president.

The nearest approach to an Old Home Week celebration in Dunbarton was the 57th wedding anniversary of Mr. and Mrs. J. A. Chamberlin, for which a large party of relatives and friends gathered. The day closed with an Old Home Week bonfire on Lord's hill, kindled by William H. Burnham of Worcester, Mass.

EPPING.

President, D. Webster Dow; vice-presidents, John Leddy, A. W. Mitchell, Daniel W. Ladd; secretary, Edwin C. Sanborn; treasurer, John J. Tilton; executive committee, George H. Macauley, Lewis P. Ladd, John S. Ladd.

Epping made much of Old Home Sunday. In the morning Rev. Henry T. Copp of Peterborough preached in the Methodist church, and in the afternoon Rev. W. P. Clancey of Massachusetts conducted a service on the lawn of the Congregational church. Both are former pastors.

Tuesday, the day of celebration, saw public and private buildings gaily decked. Early morning and late afternoon were devoted to sports and baseball. At 10.30 came an informal reception on the beautiful lawn of the Congregational church, followed by lunch.

At 2 began the day's principal observance at the town hall, to which scores could not gain entrance. A selection by the Kingston band was followed by prayer by Rev. T. G. Langdale, pastor of the Congregational church, and "Old Folks at Home" by a chorus and orchestra. D. Webster Dow, president of the Old Home association, made fitting remarks, and the address of welcome was admirably given by Charles J. Leddy.

A solo was then sung by Charles J. Silver, of Denver, a native of Epping. He was twice encored. Charles H. Adams of Melrose, Mass., made a capital address, in main part devoted to the men and women of the state who have accomplished things.

An original poem by Walter Leroy Fogg was preceded and followed by choral and orchestral selections. Addresses were announced from the town's three pastors, but Rev. Mr. Langdale explained that they thought best to give all possible time to ex-residents. Those speaking included N. Watson Ladd; Gen. Albert N. Dow of Exeter; Rev. A. Morrill Osgood of Gloucester, Mass.; W. H. Wiggin of

Lowell; Rev. Albert H. Thompson of Raymond; Dr. Samuel T. Ladd of Portsmouth; and Dr. T. O. Reynolds of Kingston.

The exercises closed with "America," and the benediction by Rev. S. F. McGuire.

The evening was devoted to a largely attended and pleasant reception at the town hall, fireworks and a band concert.

EPSOM.

President, Warren Tripp; vice-presidents, Roscoe Hill, M. D., Mrs. R. Estelle Hale; secretary, J. H. Dolbur; treasurer, B. H. Fowler; executive committee, Hiram A. Holmes, Mrs. R. W. Heath, Mrs. L. A. Well.

Epsom has not failed to devote one day in the year to an Old Home Week observance since the suggestion by Governor Rollins was first adopted. Interest in the occasion has in no way declined, as was shown Wednesday, not fewer than 500 present, and former residents participating in the festival at Tennant's grove.

Instrumental music was furnished by the Epsom brass band, and excellent vocal selections were rendered by a trio, consisting of Fred C. Fife, Mrs. Ethel Dooley and Miss Eva Lawrence.

Following a basket dinner, a band concert, and singing by the trio, the president, Warren Tripp, called the company to order, when, after invocation by the Rev. Mr. Wormwood, an address was delivered by E. J. Burnham of Manchester. This was followed by the reading of a poem by Mrs. Rosilla W. Heath, and of a paper by Miss Mary L. Wallace on "Life in Our United States of America." This was read by John N. Dolbear, on behalf of Miss Wallace, who was widely known as a school teacher in other days.

George L. Griffin, now of Concord, recited a humorous selection, and brief addresses were made by the Rev. Mr. Wormwood and Frank E. Randall of Pittsfield.

An event allied to Old Home Week was the placing by the ladies of the Centre Historic club of a marker on the spot where Mrs. Elizabeth McCoy was captured by the Indians 160 years ago.

FARMINGTON.

President, John F. Cloutman; vice-presidents, C. W. Tapley, F. R. Marston, Mrs. W. H. W. Colomy, F. J. Smith, William A. Curtis, G. A. Davis, J. L. Demeritt, Charles Emerson, Fred A. Horne, John I. Huckins, John B. Leighton, H. C. Nutter, D. Sands Roberts, Horace H. Roberts, W. V. Ware, C. Walter Whitehouse; secretary, Mrs. Adelaide Cilley Waldron; treasurer, James B. Edgerly; executive committee, F. R. Marston, J. F. Cloutman, F. J. Smith, S. S. Parker, Eugene P. Nute.

The town of Farmington held its first observance of Old Home Week in a thoroughly successful fashion. The rain storm of Aug. 20 forbade the bonfires, but these blazed brightly Monday night, while the church bells sounded from the Baptist and Congregational steeples. The Sunday exercises included an interesting discourse by the Rev. David H. Adams of Hampton, formerly of Farmington. This service was held in the Opera house. The union communion service took place at the Congregational church in the afternoon, and all present were invited to register in the church book. A mass meeting at night in the Opera house was addressed by the Rev. J. H. Wilkins, the Baptist pastor.

Tuesday night a pleasant reunion took place at the hall of Harmony lodge, K. P. Church prayer meetings, open house at lodge rooms and the public buildings, and family reunions occupied the days up to Thursday night, when a Cinderella dance was held in the Opera house. Five hundred persons were present and the event was enjoyed immensely.

Friday was the gala day. A pleasing parade was the first of the public exercises, A. Irving Nute acting as marshal. Dinner was served in the town hall, for guests, from 12 to 2 o'clock, T. H. Fletcher in charge. About 800 persons took dinner.

Exercises in the Opera house in the afternoon were as nearly as possible according to the programme, and were these: Prayer, Rev. J. H. Wilkins; music by the band; address of welcome, Hon. J. F. Cloutman; response, George E. Cochrane, Esq., of Rochester, whose wife was born in Farmington; delightful solo singing by Miss Mary H. Giles of Concord Junction, Mass.; Address, E. J. Goodwin, commissioner of the New York Education Department, principal of Farmington high school, 1872, 1881; reading of extract from letters sent by Capt. A. W. Hayes of Rochester, J. W. Titcomb, commissioner of fisheries at Washington, D. C., and Rev. C. S. Sargent, D. D., of Wichita, Kansas, by the secretary of the Old Home Week association; singing by Miss Giles; addresses by Rev. J. E. Dame, D. D., S. S. Parker, Esq., an appropriate poem by "Clara Augusta," read admirably by H. C. Waldron; address by H. B. Knox, F. W. Doring, H. C. Waldron, all of these gentlemen being school principals and speaking finely; benediction by the Rev. E. D. Disbrow, and band music.

A souvenir Old Home Week booklet of Farmington was an appropriate feature of the celebration.

FITZWILLIAM.

President, F. W. Crooker; secretary, Dr. George S. Emerson; treasurer, E. L. Stone.

Old Home Sunday was observed in Fitzwilliam with union services in the morning, and at sunset all the churches of the town uniting.

On Tuesday a large number of visitors were in town, and a basket picnic was held at noon in Estabrook grove.

The afternoon exercises took place in the Congregational church at 1.30.

F. W. Crooker, president of the Old Home Week association, gave a brief address of welcome. Dr. Edward Emerson of Concord, Mass., and Hon. A. J. Blake of Fitzwilliam followed. A letter from Henry Sabin of the Iowa state board of education was read by Helen Parker. A fine literary and musical programme followed.

There were two ball games, the Fitzwilliam A. A. playing Royalston and the Winchendon County club. A brass band played at appropriate times.

The town house with its beautiful Christopher Wren steeple was illuminated in the evening. A banquet was served at 6.30. Three hundred and forty were present, and toasts were responded to by Hon. Franklin Ridley, E. T. Burbank, Dr. Charles Denison, Rev. F. S. G. Weeks, Mrs. S. T. Whitcomb, A. C. Parker, Alvin Adams, Samuel Kendall, John S. Parker, Miss Juanietta Simons, Miss M. C. Blair, Mrs. H. M. White, William Champlin, Mrs. Lord and F. W. Crooker.

FRANCESTOWN.

President, Rev. W. L. Noyes; vice-president, George E. Downes; secretary, Mrs. James T. Woodbury; treasurer, Mrs. P. L. Clark; executive committee, Mrs. Horace R. Hubbard, Mrs. Edson H. Patch, E. W. Farnum, Mr. and Mrs. Sarah E. Bryant.

On the morning of Old Home Sunday Prof. H. S. Cowell of Ashburnham, Mass., preached at a union service in the Unitarian church, and in the evening another union service was held in the Congregational church. Tuesday evening was signalized by a splendid concert.

Wednesday a basket picnic was held on the common, with exercises in the town hall in the afternoon. Mrs. Humphreys gave fine selections. Mrs. Chase Smith and

Mrs. Heald of Milford sang. Harriet and Mary Bryant gave a duet, and Rev. Mr. Hubbard sang a solo. There were original poems by Mrs. Downes, Mrs. Atwood of New Boston, and G. F. Epps, and among the speakers of the afternoon were Dr. Fisher, Francestown's oldest inhabitant, G. D. Epps, Dr. Dinsmore of Keene, a former physician in Francestown, and others.

FRANKLIN.

President, Omar A. Towne; vice-presidents, John H. Rowell, Jeremiah K. Judkins, Warren F. Daniell, Alvah W. Sulloway, Isaac N. Blodgett, Frank N. Parsons; secretary, Miss Mary A. Proctor; treasurer, Rufus G. Burleigh; executive committee, Omar A. Towne, Clara E. Rowell, John W. Staples, Jennie M. Sawyer, Ella M. Stone.

The extremely wet weather of Saturday was not damp enough to prevent a mammoth bonfire from beaming forth its welcome last night to the former sons and daughters of Franklin. Promptly at 8 o'clock a match was touched to a fuse 100 feet long which ignited a pile of fuel including about seventy-five barrels of inflammable stuff collected at the Heath farm on Heath's heights. The combustibles included quantities of the waste gasoline from the gas works, resin and other matter.

Sunday saw the opening exercises of the celebration when Old Home religious services were held at the Christian and Methodist churches. At the Methodist church a large congregation assembled this morning to listen to an appropriate sermon by the pastor, the Rev. E. C. E. Dorian. At the Christian church the Rev. Walter B. Flanders of New Bedford, Mass., gave a fine Old Home sermon before another large congregation.

In the evening at the Christian church a layman's meeting was addressed by different men who had attended the church in the past. Brief talks were made by J. H. Rowell, Frank H. Daniell, O. A. Towne and E. W. French.

Wednesday night St. Andrews lodge, K. of P., gave a welcome to visiting members and invited guests.

On Thursday Franklin observed Old Home Week in connection with the 75th anniversary of the town. The number of out-of-town visitors was even more than was expected. Two distinct programmes were offered, one being a formal welcome by the Old Home Association, and the other being a reunion of the Franklin high school alumni.

The Old Home exercises took place in the Congregational church, a counterpart of the original, where Daniel Webster occupied a pew. The alumni reunion was held at the Opera house.

Omar A. Towne presided in the church. Besides speeches and reminiscences from ex-residents, a pleasing musical programme was provided, a feature of which was chorus singing by a choir of the older singers of the town. This choir of 40 voices was under the direction of Bradbury M. Prescott. Many of the singers had passed three score and ten, but they entered into the singing of the old-time songs with delightful effect.

Among those who were present and who made short addresses were Col. William A. Gile of Worcester, Principal Clarence A. Brodeur of the Massachusetts normal school at Westfield, Robert C. Sanger of Providence, Rev. Walter B. Flanders of New Bedford, Rev. Leslie C. Greeley of Middletown, Mass., Rev. Fr. John Casey of Manchester, and Charles T. Page of Concord.

The alumni reunion included speeches by prominent alumni and a musical programme, followed by a dance. Harry F. Davis was chairman of the evening. The speakers included Albert A. Griffin of Laconia, George H. Moses of Concord, and Rev. S. Greeley.

A poem by Prof. Frederick J. Allen of Boston was read by Mary Neal. Dancing until midnight closed the festivities.

On Friday the special feature of the afternoon was the reception to Gov. Bachelder at the Opera house, in which all of the prominent people of the city participated. Following the reception there was a reunion of the teachers and students of the old academy, the old school bell ringing out at 3.50. George R. Stone, chairman of the committee, made the welcoming address, and other speakers were James S. Weymouth of Laconia, C. A. Jewell of Boston, A. A. Smith of Reading, Mass., Gov. Bachelder, George J. Cummings of Washington, D. C., E. G. Leach of Franklin, F. E. Demick of Boston, and others.

During the session Mrs. Emma C. Parker sang "Forty Years Ago," and the entire assembly united in singing "The Old Oaken Bucket." In the evening at the Opera house a special programme was carried out, which included a poem, "The Call of the Mother," written by Miss Laura B. Rice and read by Miss Bertha I. Stevens. Miss Clara E. Rowell gave some historical glimpses of old Franklin, and an address was given by Gov. Bachelder.

FREEDOM.

President, Ralph G. Foster; vice-presidents, E. L. Mills, W. C. Brooks; secretary and treasurer, Orrin E. Drake; executive committee, George L. Philbrick, Almon R. Bennett.

For the third year in succession Freedom celebrated all through Old Home Week.

Sunday, August 21, the church was filled to its greatest capacity with listeners to the able sermon by Rev. M. J. Hornsberger. Sunday evening the townspeople received the Freedom club of Boston. Dr. Lougee, first of board of selectmen, in behalf of the town of Freedom, gave an address of welcome, followed by a response by Mrs. F. W. Towle of Boston, representing the Freedom club.

Address of welcome by R. G. Foster, president of the Old Home Week association.

An interesting address by Mrs. Josephine Towle on "The Boys of the Past."

Address by W. A. Bennett, "People of Freedom."

Address by Dr. Alonzo Towle, "The Boys of the Future."

Old time hymns were interspersed during the evening.

Tuesday evening a drama was presented by the Freedom dramatic club, entitled "Valley Farm."

Thursday evening a musicale was given by six students of the Harvard law school.

Friday, at 2.30 p. m., the Freedom club tendered a complimentary entertainment to the citizens of Freedom, consisting of music rendered by the University Male quartette, and Mrs. Mary E. Knowles of Somerville, as reader.

In the evening a grand ball was given.

Five games of baseball were played during the week.

GILMANTON.

At "Smith's meeting-house" in Gilmanton the day was fittingly observed Thursday afternoon and evening. Dr. H. W. Dudley of Abington, Mass., after some introductory remarks, presided. The following were the speakers in the afternoon: Dr. A. H. French of Pittsfield; I. C. Shannon of Laconia; Dr. McMurphy of Gilmanton academy; the Rev. J. C. Osgood of Gilmanton Iron Works; William H. Plummer of Laconia; and Arthur P. Smith of Waltham, Mass.; all of the above, except the last named, being natives of old Gilmanton.

In the evening an interesting programme was carried out.

GREENLAND.

President, John P. Weeks; vice-presidents, Charles H. Brackett, William A. Pierce, Thomas H. Wentworth; secretary, Miss Mabelle P. Weeks; executive committee, George W. Lord, Mrs. Isaac N. Carr, Andrew P. Bodge,

Mrs. Susan Moulton, Simeon S. Brackett, Mrs. John P. Weeks.

At Bayside, a picturesque spot on the shore of Great Bay, the people of Greenland Tuesday observed Old Home Day by a town picnic in which the basket lunch gave way to a tempting clambake. The attendance was large and the occasion one of thorough enjoyment, weather conditions proving most favorable for the outing. The bake was most successful.

The president of the association, John Porter Weeks, presided at brief and informal after dinner exercises. As no invitations were sent out this year, the speaking feature was curtailed, but any deficiency will be made up in 1905, when observance will be made in the town's 200th anniversary.

The oldest attendant was Mrs. Charles A. Dearborn, who, although in her 91st year, walked from her home near the Rye line three miles to the village, in order to be present.

GOFFSTOWN.

President, George P. Hadley; vice-presidents, Dr. Charles F. George, Edwin Flanders; secretary, William H. Stinson; treasurer, Ernest Johnson; executive committee, Frank A. Parker, George L. Eaton, John G. Dodge.

Old Home Day in Goffstown was Thursday, September 1; the first in the town's history, and one of the best in the state. On the previous Sunday there were appropriate special services at the Congregational and Methodist churches.

On Thursday the town was noticeably decorated and 592 visitors from 13 states registered. The sports of the day included a gun club shoot, a tennis tournament and baseball. Dinner was served to 1,300, and a trades procession was a prominent feature.

The morning was ushered in with band concerts. The principal feature of its literary exercises was the comprehensive historical address by President Hadley.

The afternoon exercises were held in the Opera house at 2 o'clock, and the programme was as follows: Song, "My Old New Hampshire Home;" solo by Chauncey J. Jones; Schumann quartette, Manchester; telegram from Pacific coast from Mr. and Mrs. George B. Stevens and Mr. and Mrs. Charles A. Whipple; original poem, Moses Gage Shirley; selection, Uncanoonuc quartette, "Only a Dream of Home;" duet, Mr. Pierce and Mr. Harvey.

The Rev. Irad Taggart was then introduced and was followed by Judge David Cross of Manchester, and the selection, "To Thee, O Country," by the Schumann quartette.

Letters of recognition of Old Home Day were read by William H. Stinson. Dr. George C. Blaisdell of Contoocook was the next speaker. He was followed by Mrs. Jane R. Paige, who read the "Chronicles."

Other speakers were Rev. S. L. Gerould of Hollis, who was pastor of this Congregational church for seventeen years; Prof. W. C. Poland of Brown university, Providence, R. I.; Daniel Taggart Dickenson, ex-mayor of Cambridge, Mass., who caused many a hearty laugh over his reminiscences of his early life in Goffstown; Prof. Frank C. Moore; the Rev. J. H. Nichols, who for eleven years was pastor of the Baptist church at Grasmere, who entertained all by many stories and sketches of the town. "Auld Lang Syne" was then sung by the quartette and audience, followed by the benediction by the Rev. C. T. Reekie. The president thanked all who had so kindly assisted in making the day such a success.

The second annual gathering of the descendants of Thomas and Jeranna Sawyer, long time residing in "Tioga," Hill, was held at "The Elms," Goff's Falls, Friday, the 19th.

The Graham (N. H.) association of Portland, Me., held a picnic at Cape Elizabeth on Saturday.

Gilsum had its annual Sunday school picnic, and Groveton, local theatricals, during Old Home Week.

HAMPTON.

Executive committee, Mrs. Howard G. Lane, Mrs. S. Albert Shaw, Henry W. Emery.

To Ocean Side grange is due the credit for Hampton's first observance of Old Home Day, a great success in every way. Old Home Sunday was appropriately observed at both the Congregational and Baptist churches.

On Thursday attendants at the Old Home Day celebration numbered nearly 700, and early in the morning they began to gather at the beach, the place of meeting being the Casino. Much of the morning was devoted to athletic sports and a baseball game between the town and the academy class of 1887. The town won, 4 to 3. Those to whom athletics did not appeal passed a delightful forenoon in social reunion.

At 1 p. m. dinner was served in the great hall of the casino, which was completely filled and again half-filled at the second serving. For family and other reunions special tables were provided. At one sat the 13 survivors of the 15 children of Capt. Jonathan Godfrey. There were 12 attendants at the Perkins reunion. The association of persons born in Hampton in 1835 was numerous represented. A jolly reunion was that of all the 14 members of the class of 1887, the first graduated from Hampton academy and high school. It has furnished to Hampton its president, treasurer and postmaster, and is otherwise prominent in the town's life. It was the 43d anniversary of the departure of Hampton men for the front with the 3d N. H. regiment. Four of its five surviving resident members were honored attendants.

The dinner was followed by an informal reception, and at 2.30 began the literary exercises in Convention hall.

Rev. Edgar Warren of the Congregational church was president of the day. Upon the stage sat the town's oldest inhabitant, Miss Judith Dearborn, now nearly 97 years old, and its oldest native-born resident, Mrs. Sarah M. Lamprey, entered upon her 94th year.

After opening orchestral selections, Rev. George C. Waterman of the Baptist church gave the invocation, and Rev. Benjamin F. Perkins, a retired Congregational clergyman, made the address of welcome. The principal address was by Hon. John H. Bartlett of Portsmouth, on "Old Homes and Historic Hampton." Mrs. Lucy A. Marston contributed an original poem. The presentation of flowers to Mrs. Lamprey was a pleasing feature, a little great-granddaughter making the presentation. Citizens and guests making short addresses were Lewis Perkins of Newton, Mass.; Percy D. Godfrey of St. Paul; Charles Marseilles of Exeter; and Rev. John A. Ross, pastor emeritus of the Congregational church. Many interesting letters were read.

Orchestral music, songs and readings by Fred E. Kendall of Boston, and the singing of "Auld Lang Syne" and "America" by the company completed the programme.

HANCOCK.

President, Joseph A. Tarbell; vice-president, Edwin N. Lovering; secretary, Annie H. Fogg; treasurer, John A. Hadley; executive committee, Almon Hill, Mrs. Will O. Stearns, Mrs. Noah W. Farley.

At Hancock on Wednesday the morning hours were given up to social greetings and to family reunions. The dinner was enjoyed by a large number on the shore of Norway pond. At 2 o'clock the formal exercises were held in the church which was filled to its utmost capacity, and were as follows: Invocation, Rev. W. A. White; address of welcome by the president, Joseph A. Tarbell; chorus,

"Home Returning;" poem by Mrs. Love Whitcomb of Glenora, N. Y.; Address by Fred B. Richards of Lyndeboro; chorus, "Great is the Lord;" remarks by Rev. J. L. Seward of Keene, Charles Pearsons of Brooklyn, N. Y., Rev. C. H. Chapin of New Salem, Mass., a former minister, and C. H. Duncan of this town. The exercises closed with singing "America."

HENNIKER.

Henniker's annual Old Home Day was postponed in 1904 until Thursday, September 22, when the Tucker Free Library building was formally dedicated, the exercises being held in the Congregational church. Music was furnished by the Wahnetah orchestra of Hillsborough and the Mendelssohn Ladies' quartette of Concord. The exercises opened with prayer by Rev. A. W. Frye, after which E. N. Cogswell, the chairman of the executive committee, gave the address of welcome. Gen. John H. Albin of Concord delivered the address of presentation, and Rev. T. C. H. Bouton the address of acceptance. Col. L. W. Cogswell of Henniker gave the historical address, and Hon. Albert E. Pillsbury of Boston, the oration of the day. Hon. Joseph B. Walker of Concord spoke briefly, and letters from absent friends were read. The exercises closed with the dedicatory hymn, written by Rev. N. F. Carter of Concord, and the benediction by the same gentleman.

HOLLIS.

President, Andrew H. Spalding; vice-presidents, Ralph E. Tenney, George W. Hardy; secretary and treasurer, Albert F. Hildreth; executive committee, Ralph E. Tenney, Charles S. Spalding and Charles W. Hardy.

Hollis celebrated on Old Home Sunday the 100th anniversary of the Congregational church. A splendid musical programme was rendered, and the pastor, Rev. Samuel L. Gerould, gave a historical address.

Wednesday was Old Home Day and a great crowd gathered to enjoy, in addition to the literary exercises, sports of various kinds, band concerts and a ball in the evening.

After dinner, Andrew H. Spalding, president of the Old Home Week association, gave an address of welcome to the assembled guests, and Rev. Samuel Gerould was elected as toastmaster. The first number was a reading by Miss Hattie M. Blood, a native of Hollis, who is at the present time a teacher in the Columbian school of oratory in Chicago. Following this addresses were given by Hon. Frederick A. Hubbard of Greenwich, Conn., Mayor J. J. Doyle of Nashua, Rev. Daniel E. Adams of Mason, Vt., Thomas W. Proctor of Boston, Darius L. Scott, and Judge F. J. Worcester of New York City.

HANOVER.

President, John M. Fuller; vice-presidents, Don S. Bridgman, A. A. Plummer; treasurer, Edward P. Storrs; secretary, Daniel B. Russell; executive committee, John M. Fuller, W. G. Hurlbutt, T. W. D. Worthen.

At Hanover on Old Home Sunday the pastor of the College church, Rev. Ambrose W. Vernon, preached an appropriate sermon.

On Wednesday Old Home Day was ushered in at 6 o'clock in the morning by the ringing of the chime bells. The day was all that could be desired. The guests poured in from every direction, and at noon there were 650 people present.

At 9 o'clock the college buildings were thrown open for the inspection of the visitors and many availed themselves of the opportunity. At 11 o'clock a social gathering was held in front of College church. The renewing of old friendships was one of the pleasantest features of the day. Music for the day was given by a chorus composed of the choirs of the various churches and by the Oberon Ladies' quartette of Laconia.

At 1 o'clock there was held a basket picnic under the trees near the church, and out-of-town guests were provided for by the committees.

The programme was as follows: "Home Again," choir; prayer, the Rev. S. P. Leeds; song, quartette. J. M. Fuller presided and gave the opening address of welcome. At his right hand sat the eight oldest male residents of Hanover.

A selection was given by the quartette, after which Prof. D. C. Wells of Dartmouth college welcomed the guests to the college. Professor Young was the next speaker, and a song by the quartette followed. E. C. Hutchinson of Governor Bachelder's staff was presented and spoke on "The Relation of the Grange to Old Home Week." F. G. Story of Boston made a few remarks, and another song by the quartette was enjoyed. Letters from many unable to be present were received.

The principal of the Hanover high school gave some idea of the work of that school. E. H. Cheney of Lebanon, last speaker of the day, then gave a short talk. "America" was sung in closing by the entire congregation.

At 8 o'clock a concert was given in College hall by the Oberon quartette.

HOPKINTON.

President, A. W. Goodspeed; vice-presidents, F. E. Dodge, Rev. Thomas J. Drumm, Rev. N. C. Lathrop; recording secretary, Rev. Louis Ellms; corresponding secretary, C. C. Lord; treasurer, J. S. Kimball; chairman of directors, T. J. Putney.

Hopkinton had an immense Old Home Week bonfire on Mount Putney Monday night. The day before a union Old Home religious service was held in Chase's grove, Rev. W. S. Emery of Tilton preaching the sermon.

Thursday was Old Home Day and more than a thousand

people enjoyed dinner, sports, social reunions and the following programme: Invocation, the Rev. Louis Ellms; "Home, Sweet Home," sung by all present; words of welcome and reading of letters by A. W. Goodspeed, president of the day; "America," by choir and audience; oration, Mayor Charles R. Corning of Concord; solo, O. W. Crowell, Concord; "Tribute to Friends Whose Places are Vacant Today," the Rev. T. J. Drumm; "To Thee, O Country," double quartette; poem, in memory of Robert R. Kimball and Mrs. S. M. Bailey, C. C. Lord; "Sweet and Low," double quartette; poem, Mrs. Lavinia P. Weeks; brief addresses, ex-Mayor Tewksbury of Lawrence, Judge M. Perry Sargent of Amesbury, the Rev. W. H. Eaton, D. D., of Boston, H. G. Chase of Chicago, the Rev. W. H. Peabody of Warner; "Auld Lang Syne," by all present; benediction, the Rev. Mark Tisdale.

Hampton Falls grange held its annual outing at Lake Attitash on Tuesday of Old Home Week.

The annual reunion of the Hersey family was held in Hill on Wednesday.

The water carnival at Holderness, which introduced Old Home Week in 1903, was held this year on Friday, August 12. Dean Hodges of Harvard conducted services on Old Home Sunday in the Episcopal chapel at Shepard Hill, Holderness.

The Hebron Social circle held its annual fair and sale Friday.

The 24th annual reunion of the descendants of Isaac Cummings was held at Hudson.

A Universalist grove meeting was held on Old Home Sunday at Prescott's grove, Hooksett.

Hillsborough, which did not celebrate Old Home Day, 1904, though a large town appropriation was made for that purpose, is already in line for 1905.

LANCASTER.

The Unity club, Mrs. Ida Jordan, president, and Mrs. Elizabeth Buckley, secretary, was responsible for the entire success of Old Home Week in Lancaster. On Sunday a union religious service was held, with sermon by Rev. Percival F. Marston of Lewiston, Me. Wednesday was the great day, stores and private residences were decorated. At noon dinner was served in the town hall. Two tables stretched the full width of the hall were not sufficient to accommodate all the guests and many were accommodated at the tables reserved for the town picnickers. The huge stage was one mass of flowers and potted plants and banners were lined about the big hall. A banner from the stage arch said, "Welcome Home." The dinner was served by the Unity club, with young society maids and matrons as waitresses.

Ex-Governor Chester Bradley Jordan was toastmaster and welcomed the guests. Among the speakers called upon with their toasts were Carleton F. Holton of Boston, "Lancaster's Beauties;" John Benton of Keene, "Old Folks at Home;" Rev. William Joyslin, "In Schooldays;" J. I. Williams of Lancaster, "Village Improvements;" E. J. Hartshorn of Washington, D. C., "Inns of Yesterday and To-day;" James S. Brackett of Lancaster, "Transportation, Past and Present;" Rev. Percival F. Marston of Lewiston, Me., "Unity Club." This was followed by reading letters from former residents unable to attend.

It was after 4 o'clock when the final exercises of the afternoon were held, but in the evening there was another large crowd at the formal reception in the Opera house. Members of the Unity club introduced the guests, and songs and instrumental music were given throughout the evening.

Further entertainment was provided on Friday afternoon in the form of an enjoyable musical and literary programme.

LEE.

President, John C. Bartlett; vice-presidents, Fred P. Comings, Arthur Thompson; secretary, Mrs. Benjamin F. Davis; treasurer, Mrs. George E. Chesley.

Lee's big bonfire was kindled on Wednesday hill Monday night.

The Old Home Day reunion took place Wednesday with many sons and daughters answering the call. In the morning the married men beat the single men at baseball, 35 to 5. About 500 sat down to dinner in the prettily decorated grange hall. Mrs. Lyford Wiggin was in charge of the arrangements.

The people gathered in the chapel at 2 o'clock. Rev. George E. Kinney of Mt. Desert, Me., recently called to the Congregational church, offered prayer, and President Bartlett welcomed the home-comers, Rev. J. W. Lees responding. J. Irving Davis and Edna Bartlett sang. There were songs by the children and by a women's chorus. Among the speakers were Rev. C. S. Bates, J. I. Davis of Providence, Rev. W. S. Beard of Durham, Rev. George E. Kinney, Rev. Luther McKinney, Brooklyn, N. Y., E. O. Fifield of Nashua. Letters from a large number of former residents were read by Grace Davis.

LEMPSTER.

Many old residents came back to Lempster for Old Home Day Thursday. After a picnic dinner exercises were held in Union hall under the direction of President Parker, who gave the address of welcome following prayer by Rev. Mr. Felch and singing by a select choir. Among the speakers were Dr. L. C. Taylor, William and John Wilcox of South Haven, Mich., Miss Hila Helen Small of Boston, Henry H. Metcalf of Concord, Horace and Bertram Fuller of Leominster, Mass., William Way, George Mone and A. J. Mitchell. In the evening Denman Thomp-

son's "The Old Homestead" was played by local talent, the first time it was ever given by amateurs.

LONDONDERRY.

Londonderry's Old Home exercises were held in the Presbyterian church on Sunday morning, an hour of social reunion preceding the formal observance. Prayer was offered by Rev. Samuel F. French, and Hon. Rosecrans W. Pillsbury, president of the association, gave an address of welcome. A special musical programme was rendered, Rev. Wesley J. Wilkins offered prayer, and Mrs. Mary Perkins gave an interesting talk.

LYME.

President, Sidney A. Converse; vice-presidents, Lee C. Andrews, Henry A. Bailey; secretary, Payson E. Fairfield; treasurer, George S. Meigs; executive committee, P. H. A. Claffin, George A. Pushee, J. F. Elliot.

Old Home Day in Lyme could not have been a more perfect day, and the assemblage was the largest ever known in Lyme. The officers of the Old Home association with many other citizens, headed by the Lyme cornet band in uniform, met Governor Bachelder and Colonel Emri C. Hutchinson of his staff at the station on the arrival of the eleven o'clock train. The procession marched to the church hall where dinner was served for the governor and other guests, and a basket picnic was held under the trees around the church, where there was a large gathering. The exercises at the church began at 12.30 o'clock and included the following: Music, orchestra; prayer, the Rev. B. M. Webster; song, choir; address of welcome, the Rev. C. R. Small; address, Governor Bachelder; poem, "Welcome," Mrs. Amsden; song, choir; poem, Mrs. S. S. Converse; recitation, Miss Flint; remarks by returned wanderers interspersed with music and songs.

LYNDEBOROUGH.

Lyndeborough postponed its Old Home Day until September 9, and combined it with the 100th anniversary of the famous Lafayette Artillery company. Except in weather, which was of the wettest possible variety, the occasion was an entire success. The day opened with a salute from the historic brass six-pounder. The event of the forenoon was the parade of the artillery company, escorted by Troop A, cavalry, of Peterborough, and Company D, infantry, of Milford. A great dinner was served at noon, and at 2 o'clock the speaking began, the speakers being Governor Bachelder, Congressman Frank D. Currier, former Congressman Baker, Bow; C. H. Burns, Wilton; Charles J. Hamblett, Nashua; Gen. Daniel M. White, Peterborough; Brig. Gen. Jason E. Tolles, Nashua; N. C. Jameson, Antrim; Maj. D. E. Proctor, Wilton; Mayor J. J. Doyle, Nashua; the Rev. F. H. Buffum, Winchester; the Rev. M. F. Johnson, Nashua; Col. John G. Crawford, Manchester; the Rev. Fred Donovan, Newton, Mass. The exercises were opened by an invocation. Jacob A. Woodward acted as chairman.

The town was beautifully decorated for the celebration, which closed with a dance in the evening.

At Litchfield was held the annual reunion and picnic of the descendants of Edward Parker.

London grange gave a lawn party on Thursday.

The Suburban club of Lebanon held an Old Home meeting, and East Lebanon had a Home Week sociable on Friday.

Laconia practically decided to celebrate in 1905.

MADISON.

President, Rev. D. M. Phillips; vice-presidents, Edward E. Hoyt, Jr., John F. Chick; secretary, James O. Gerry;

treasurer, I. A. Forrest; executive committee, D. M. Phillips, E. E. Hoyt, Jr., John F. Chick.

Madison published a handsomely illustrated historical Old Home Week booklet, announcing an elaborate 1904 programme, which began on Sunday with a religious service at which the preacher was Rev. Dr. Pierson of Maine, a native of Madison.

Monday evening came the bonfire and addresses by Rev. S. M. Crothers and Rev. Edward Cummings of Cambridge, Mass. Tuesday was devoted to a 14-0 baseball victory over Freedom.

Wednesday was Old Home Day with the usual picnic in the grove, music by the Chocorua band, and addresses by Frank P. Schmitt, Jr., of Chicago; H. W. Harmon of Effingham; Rev. Thomas Lewis of Conway; L. G. Clark of Chocorua; and Rev. Alonzo Nickerson of Tamworth. Baseball in the afternoon was followed by whist in the evening.

Thursday evening was given over to a vaudeville, and Friday to the closing ball. A feature of the week was the exhibition of paintings by Miss Lepper, a native of the town.

MARLBOROUGH.

Old Home Week was ushered in by a union meeting at the town hall on Sunday evening, August 21, with a very able sermon, appropriate to the occasion, by Rev. E. W. Webber, pastor of the Universalist church.

In the forenoon of Tuesday there was an inspection of the fire department.

The literary programme of Old Home Day was held in Centennial grove. The meeting at the grove was called to order by the president, J. Milton White, followed by a prayer by Rev. A. M. Markey, pastor of the Methodist church. The address of welcome was delivered by S. Kil-

burn Southwick, Esq., replied to by Rev. Charles Talmage.

The musical part consisted of music by Maynard's orchestra of Keene; singing by the Mason quartette of Keene, formerly residents of this town; also singing by the Junior Mason quartette. Readings were given by Miss Helen H. Wiswell and Miss Bertha M. Hart, and remarks by Rev. Alek Wilwell and others.

The estimated number present was 1200.

Officers of the association were elected for the ensuing year as follows: President, Edward P. Richardson; vice-president, Hon. Levi A. Fuller; secretary, S. Emerson Partridge; treasurer, Dow J. Hart.

MANCHESTER.

In addition to the interesting celebration at Amoskeag, described under that head, there were other Old Home Week celebrations within the limits of the city of Manchester, notably at the First Methodist church in East Manchester, which celebrated its 75th anniversary on Old Home Sunday. At the morning service historical addresses were given by G. Waldo Browne, E. J. Burnham and G. C. Kemp. In the afternoon exercises were held at the church branch at Massabesic, the speakers including A. S. Lamb and others. In the evening the pastor, Rev. C. H. Farnsworth, preached the anniversary sermon.

Appropriately classed under the Old Home head, also, was the annual meeting of the Old Residents' association, held in September, with an address by the venerable Judge David Cross, who was re-elected president of the association.

MARLOW.

President, Leander B. Huntley; vice-presidents, Perley E. Fox, Amos E. Rogers; secretary, Harlan E. Honey; treasurer, Miss Sarah E. Phelps; executive committee,

Elbridge Phelps, Rockwell F. Craig, Mrs. Marian G. Perkins.

Marlow's Old Home Day celebration which occurred Thursday, August 25, was largely attended, and as much enjoyed and as successful as those of previous years. As on a former occasion, the gathering was at Edgewood during the day, and at Jones' hall in the evening. The time from the middle of the forenoon until 2 o'clock p. m. was spent socially. At the noon hour the people gathered in family groups and enjoyed the delights of a basket picnic. Soon after 2 o'clock the formal exercises of the day began with an invocation by Rev. F. O. Tyler, followed by instrumental music from Lester, Clarence and Miss Modena Booth of Hinsdale, with violin, cornet and organ. Leander B. Huntley, president of the association, after a few cordial words of welcome introduced Lucius Cragin of Springfield, Vt., who gave the principal address of the day. He was followed by brief remarks from Hon. George F. Tinker of New London, Ct., Milton Tenney of Antrim, B. F. Knight of Hancock, Herbert Raymond and George W. Clyde of Keene, Clark Lowell of Union City, Mich., Daniel Farnsworth of Claremont, Willie Phelps of Greensboro, N. C., E. A. Jones and P. E. Fox of Marlow. Rev. F. O. Tyler and Miss Maud Weeks sang solos.

In the evening Jones' hall was filled by an appreciative and enthusiastic audience, and the concert programme given by the Booth family was one of the best entertainments of the kind ever heard in town.

MIDDLETON.

President, William F. Hanson; vice-presidents, William Chapman, Warren H. Whitehouse; secretary, George H. Cook; treasurer, Mrs. Frederick A. Orne; executive committee, Fred R. Cook, Oscar Leighton, Charles Knowles.

Rev. R. W. Drawbridge of Medway, Mass., preached the Old Home Sunday sermon at Middleton. On Wednesday was held the 29th annual reunion of the sons and daughters of Middleton, with more than 400 present.

The morning exercises began at 10 with a voluntary by Mrs. Fred Jones. Introductory remarks were made by the president, William F. Hanson, Rev. R. W. Drawbridge offered prayer, and the address of welcome was given by Helen Cook. The Old Home Week chorus then sang "Home, Sweet Home." After a recitation by Helen Morrow and a solo by Mrs. Henry Stevens, speeches were made by several of the home-comers. The address was delivered by Professor Knox of Rhode Island. Sylvia Fiske gave a recitation, and there was instrumental music by Masters Wiggin, Taft and Drew.

At the afternoon gathering Frank R. Marston of Farmington gave an address on "Old Home Week and the Grange." There were recitations by Helen Knowles, Addie McDonald and Grace Leighton, duets by Mrs. Stevens and Miss Runnells, Rev. and Mrs. Drawbridge, and addresses by many of those present. All joined in singing "Auld Lang Syne" at the close.

There was an interesting sport programme at noon, including a bag race, three-legged race, 100-yards dash, potato race, high and broad jumps, etc.

In the evening the Old Home Week ball took place at the town hall, and there was also singing in the old church by those who did not attend the ball.

MILFORD.

While there was no formal Old Home Day celebration in Milford a number of reunions of much interest were held during Old Home Week. On the 80th birthday of Prof. William L. Whittemore alumni of the Milford high school from many states gathered to observe the anniversary, Hon. Albert E. Pillsbury of Boston presiding.

One hundred members of the Burns family met at Echo grove, a novel feature of the programme being the award of prizes for cake making. Next year plain sewing will be the subject of contest.

A remarkable occasion was the reunion of the Hutchinson family of singers at the old Hutchinson homestead on the 75th birthday of "Aunt Abby" Hutchinson Patton, the venerable John W. Hutchinson presiding.

MONROE.

Monroe observed its semi-centennial with a town picnic on Monday of Old Home Week, preceded with appropriate religious services on Sunday, conducted by Rev. E. C. Langford at both Monroe and North Monroe. On Monday afternoon at 1 o'clock literary exercises were held, consisting of a welcoming address by Oscar Frazer, chairman of the selectmen; prayer by the Rev. E. C. Langford; songs by the choir; solos by Miss Bertha Smith and Fred Bolton; historical sketch by Alexander Warden; recitations and singing by the children; remarks by the Rev. E. C. Langford and others.

MONT VERNON.

President, Rev. H. P. Peck; vice-president, W. P. Woods; secretary, Mrs. W. Kendall; treasurer, George A. Marden.

Mont Vernon's sixth Old Home Week observance, scheduled for Monday and Sunday, was cut pretty nearly in two by bad weather. But informal vaudeville by Boston Cadet stars and others and dancing were enjoyed Saturday afternoon and evening. Sunday morning Rev. H. P. Peck preached and the Colonial quartette sang. In the evening, at the accustomed laymen's meeting, Guy A. Ham, Esq.,

of Boston, was the principal speaker, with John Colby, Esq., and Hon. George A. Marden also on the programme.

Melvin Village, on Lake Winnipiseogee and Camp Tecumseh, opposite Melvin, had August gala days in close proximity to Old Home Week.

The fifth annual concert and sale of the Congregational church in Meredith was an event of the week; as was, also, the Smith family reunion at Moultonborough.

NELSON.

The Nelson School association held its annual meeting on Tuesday, August 16. Granville Wardewell, president, carried out interesting programmes afternoon and evening. Some twenty speakers were heard, interspersed with music and poems by Mrs. A. E. White and D. Webster Hardy of Boston, a native of Nelson. On Wednesday 600 attended the annual town picnic at which Deacon Harvey Phillips, one of the few survivors of the original organization, presided.

Among the speakers were Judge Silas Hardy, Keene, who gave historical reminiscences; Charles L. Griffin of New York, Arthur Livermore, Rev. C. P. Pledger of Northfield, Charles Rutherford of Central New York, J. M. Robbins of Cambridge, S. Farrington Kittredge of Boston, Dexter Greenwood of Mt. Vernon. Munsonville band discoursed good music at intervals.

New Boston's equivalent for, and predecessor of Old Home Day is Old Folks' Day, held in 1904, its twelfth year, on June 2. Eben Dodge, president of the association, conducted the after dinner exercises, and the secretary, Mrs. S. D. Atwood, read letters of regret and presented her report, showing 12 deaths of members during the year. The programme included music, readings and recitations, and brief addresses by S. D. Atwood, Waterman Marden,

Hugh A. Newton, John Smith, Levi Dodge, Manchester, Leslie Millar, Boston, Milton Cogswell and Charles Shedd.

NEW DURHAM

President, Rev. J. F. Joy; secretary, Georgia O. Berry; treasurer, J. F. Dorr; executive committee, J. E. Berry, Charles Evans, E. K. Amazeen.

Old Home Day in New Durham Thursday was one of the most successful social events in the history of the town. In the forenoon a flag raising and baseball divided attention. After dinner had been served to 300 the following programme was presented: Music by the Ridge choir; prayer, Rev. J. F. Joy; address of welcome, F. W. Coburn, Jr.; response, C. G. Ham of Watertown, Mass.; solo, Mrs. H. W. Cummings; addresses by Rev. E. K. Amazeen, E. E. Rice, F. W. Coburn, and others; also recitations and singing by children from the Ridge.

NEWFIELDS.

At Newfields the festivities began Saturday evening, when the Daughters of the American Revolution held an entertainment in the town hall, the proceeds to go towards a soldiers' monument. The affair was largely attended by the townspeople, the old residents and many from the surrounding towns.

Sunday many of the former residents gathered at the Universalist church, where they were addressed by the Rev. W. H. Trickey of Claremont, a former pastor of the church. The reception was held in the Universalist church at 5 o'clock. The old-fashioned songs were sung and the many who were present enjoyed the exercises.

NEW HAMPTON.

President, Richard Pattee; secretary and treasurer, Kathleen T. Piper; executive committee, M. H. Morrow, C. D. Thyng, F. D. Sanborn, Kendrick W. Smith.

Mrs. A. J. Gordon of Boston preached on Old Home Sunday at the old Dana meeting-house in New Hampton. Wednesday was Old Home Day, as usual, and a large company assembled near the town house on the campus at the first site of the New Hampton Institution. President Pattee conducted the exercises, which included addresses by Governor N. J. Bachelder, Hon. J. H. Walker of Worcester, Mass., and Mrs. Gordon, H. W. Berry of Boston, a former resident, sang.

NEW IPSWICH.

Tuesday at Smithville was the time and place of Old Home Day in New Ipswich. Athletic sports, two baseball games, a basket picnic and a ball in the evening were on the programme. On Thursday was observed the 115th anniversary of the incorporation of New Ipswich academy, and the 50th of the present building. More than 200 sat down to dinner in a large tent on the campus.

After dinner Charles E. Hill of Baltimore, Md., read a historical and biographical paper by Sarah F. Lee, class of '58, which was the feature of the day. A poem was read by Dr. Henry H. Piper of Somerville, Mass., class of '72. An orchestra from Fitchburg, Mass., furnished music under the direction of Mrs. Hattie C. Clark McKown. Speeches were made by Prof. Charles F. Emerson of Dartmouth college, James G. Ramsdell of Philadelphia, Amos J. Blake of Fitzwilliam, and Hon. Albert E. Pillsbury of Boston. The exercises closed with a hymn written by Mrs. Mary Ames Tucker of Boston, sung to the music of "Auld Lang Syne."

The following officers were elected: Dr. J. L. Hildreth of Cambridge, Mass., president; George A. Kimball of Somerville, Mass., Myron Taylor of Arlington, Mass., and Hon. Albert E. Pillsbury of Boston, vice-presidents; George O. Whiting of Lexington, Mass., secretary-treas-

urer ; Mrs. Lizzie Clark Crowell and Miss Nellie F. Mecuen of Boston, assistant secretaries ; Mrs. Emma Taylor Hardison of Wellesley Hills, Mass., John W. Cummings of Brooklyn, N. Y., I. W. Chick of Boston, Herbert J. Taft of Greenville, Sarah F. Lee, Mrs. Hattie Clark McKown, Caroline F. Barr, Caroline E. Lowe and William A. Preston, executive committee.

NEWMARKET.

Old Home Sunday services were held in the Methodist church with special musical features and a sermon by Rev. C. D. Hills, D. D.

A Newmarket club was formed in Boston which will take part in an Old Home Day celebration at Newmarket in 1905.

NEWPORT.

At Newport the Red School House association held its eighth annual reunion and picnic Friday. A large number were present, including some new ones who came for the first time, R. W. Allen of Detroit, Mich., and John T. Emerson of Andover, who were scholars 54 years ago. After dinner remarks were made by Rev. J. H. Blackburn, Bela Graves, J. T. Emerson ; R. W. Allen and Prof. C. J. Emerson ; a poem by E. Willis Hurd ; and readings by Mrs. A. S. C. Bartlett and Etta F. Gove. The old board of officers were re-elected for another term.

NORTHAMPTON.

It was late in the season when the grange at North Hampton decided to celebrate Old Home Day, but the resulting town picnic was an entire success. It was held in Hobbs' grove, and the many visitors included George H. Safford, secretary and treasurer of Howard university at

Washington; Mrs. Fred Blood of Cleveland, Mr. and Mrs. John Merrion of Jersey City, Mr. John W. Berry of Melrose, Mr. and Mrs. Frank Leach of Cambridge.

NORTHWOOD.

Five hundred people enjoyed Northwood's varied programme on Wednesday: Baseball in the morning; a basket picnic on an island in Harvey's pond at noon; a formal programme on the grounds of Coe's academy in the afternoon. The oration of the day was delivered by Mrs. Ella Knowles Haskell of Butte, Montana, the famous woman lawyer, who ran for attorney general of her adopted state and after her defeat married her victorious opponent.

The other literary exercises were as follows: Prayer, the Rev. Mr. Lowell; greeting song, written by G. C. Selden and sung by a chorus; address, the Rev. Mr. Kelsey; song, "The Latch String is Out," George W. Boody; poem, written by David Smyth, read by Miss Leah DeMeritte; song, "My Childhood's Home," chorus; address, David Smyth; hymn, "America," chorus; selection by the band.

NOTTINGHAM.

President, E. Frank Gerrish; vice-presidents, M. B. Neally, James H. Kelsey, 2d; secretary, Miss Elizabeth W. Cilley; treasurer, Mrs. S. A. Watson; executive committee, Perley Batchelder, Rufus Tuttle, Walter Cilley.

Special services on Old Home Sunday were held in the Universalist church in the forenoon, and in the Free Baptist church in the evening. Monday night a huge bonfire was kindled that was seen for miles around.

Tuesday was Old Home Day, and the literary exercises were held in the Free Will Baptist church at 2. Prayer by Rev. Ira D. Morrison, the Universalist pastor, was followed by a welcome song written by Mrs. Sarah Haley,

and sung by the choir. Rev. Mr. Morrison gave the address of welcome, with response by Lovering G. Williams, principal of Northwood seminary at Northwood. Others who made addresses were Rev. Mr. Kelsey of Northwood, George K. Neally of Bradford, Mass., and J. C. Bartlett of Lee. An original poem by Laura A. Norris of Hampton was read by Mrs. Charles W. Miffin of Exeter. There were songs by Mr. Gile of Candia, Edna Bartlett and Benjamin T. Bartlett of Derry. Mrs. Chesley and Miss Bartlett sang "The Old Oaken Bucket." Choral selections were "America" and "Auld Lang Syne." The closing remarks were made by E. Frank Gerrish, president of the Old Home association, and the services closed with a verse of "God Be With Us."

Many interesting letters were received from former residents unable to be present.

The evening was devoted to an orchestral concert and a pleasant social dance with many attendants.

The annual reunion of the Tuttle family was held on Wednesday.

Northfield, which appropriated \$50 for Old Home Day, did not spend it, but Glines and Clark family reunions were held, and one of the best bonfires in the state burned on Bean hill.

PEMBROKE.

President, Prof. Isaac Walker; vice-presidents, Samuel D. Robinson, Martin H. Cochran; secretary, George H. Colby; treasurer, Thomas D. Avery; executive committee, Levi L. Aldrich, Charles S. Adams, J. H. Robinson, George B. Lake, Mrs. B. G. Spaulding, Mrs. Eleazer Baker, Miss Julia E. Gilbert.

At Pembroke the Old Home Day celebration was held Tuesday in Simpson's grove, a beautiful stretch of pine

woodland. Two thousand persons attended the celebration, which lasted until sundown. A fine dinner was served at noon and the exercises were held in the grove at 2 o'clock.

An interesting feature of the celebration was the reading of a letter from Mrs. Mary Baker G. Eddy of Concord, by President Baker of the board of trustees, donating \$1,000 to the fund for the new building of Pembroke academy now being completed.

Harry F. Lake of Concord, a native of Pembroke, was president of the day, and first called upon Rev. P. E. Bourne of the Congregational church to offer prayer. The order of the programme which followed was: Address of Welcome, Samuel D. Robinson; selection, Pembroke glee club; address, Hon. James E. Odlin of Lynn, Mass.; song; C. C. Schoolcraft of Concord; reading, Estelle Smith of Concord; address, Hon. Henry F. Hollis of Concord; reading, Rev. J. M. Olmsted; song, C. C. Schoolcraft; reading, Estelle Smith; short addresses by returned sons and daughters, and visitors.

A cornet band gave a concert during the forenoon and after the formal exercises. The day was perfect and the occasion proved a very happy one.

PETERBOROUGH.

President, Charles Scott; vice-presidents, Mortier L. Morrison and John Q. Adams; secretary, George W. Ames; treasurer, James F. Brennan; executive committee, Ezra M. Smith, William Moore, Samuel W. Nichols.

Peterborough had a great bonfire on Pack Monadnock mountain. On Wednesday evening the alumni of the high school held their 18th annual reunion.

Thursday was Old Home Day. A social gathering and basket picnic was held in Putnam grove from 10.30 to 12.30 o'clock, and at 1.30 the exercises took place in the town

hall. President Charles Scott opened the programme by welcoming all heartily. After the Lord's prayer by the audience and invocation by Rev. W. H. Branigan, "The Old Oaken Bucket" was sung by the Oberon woman's quartette. Interesting letters were then read by George W. Ames from Elias Boynton of Wisconsin, D. W. Gould of Chelsea, Mass.; Henry H. Kimball of Boston; C. H. Holden of Peabody, Mass., and Arabella S. Smith of Dublin. Rev. J. H. Hoffman of North Reading, Mass., for several years pastor of the Union Congregational church, delivered the address of the day.

President Scott then called upon the following: R. B. Hatch of Peterborough; Dr. John L. Hildreth of Cambridge, Mass., and Rev. Willis A. Hadley of Keene. Of the 25 principals of the old academy, only eight are now living, and of these there were present Dr. Hildreth, R. B. Hatch, William Moore of Peterborough, and Martin H. Fisk of Temple.

During the day the members of the school board acted as a reception committee, and the old academy and high school buildings were thrown open, as was also the new cavalry hall.

There were two baseball games between strong teams of Peterborough and the Jaffrey Browns of East Jaffrey.

PIERMONT.

President, G. H. Reneau; vice-presidents, E. R. Celley, Joel Pennock; secretary, O. B. Stanley; treasurer, G. W. Stanley; executive committee, H. E. Morrison, W. E. Ford, Aaron Barton.

The third annual Old Home Day was celebrated in Piermont Wednesday, and was pronounced a success by all present. In the morning all enjoyed meeting old friends and had a general good time. At noon dinner was served in the town hall to over 300 persons, after which the Rev.

George Hudson of Lyman opened the exercises with prayer.

Instrumental music followed by Herbert Cilley, Edward Cilley, Joseph Evans and Mrs. Freeman Robie. Miss Hattie Blaisdell then read an interesting paper on the early history of Piermont. Mrs. William Ford sang "Old Home," a song composed by Daniel Hodsdon of Somersworth, Mrs. Freeman Robie, Will Ford and Harry Hodsdon assisting in the chorus.

Mrs. Sarah Freeman of Groton, Vt., who was born in Piermont over 80 years ago, gave a very interesting account of the people and customs with which she was associated in her childhood.

Ira Gould of Lisbon, who is still an active business man, was born in Piermont 85 years ago, and entertained the company in his usual lively manner. The Rev. George Hudson of Lyman, Amos Clark of Wentworth, and Robert Evans of Chelsea, Mass., all gave interesting talks.

The Rev. Arthur Smith read letters from several who were unable to be present, and the exercises closed with the singing of "America" by all present. There are still twenty-one people living in town who were here sixty-five years ago.

PLAINFIELD.

President, the Rev. George B. Trow; vice-presidents, Harold W. Chellis and Frank W. True; secretary, Mrs. D. C. Westgate; treasurer, George Ruggles; executive committee, A. K. Read, C. S. Burr, N. R. Andrews.

At Plainfield Friday five hundred people gathered in the town hall to celebrate Old Home Day. Music for the occasion was furnished by the Windsor, Vt., band. The exercises were opened with reading of the Scriptures by the Rev. A. L. Powell of Meriden; prayer, B. H. Bailey, Malden; address of welcome, president, the Rev. George Trow,

Plainfield; response, Charles Knight, Boston. Among the other speakers were the Rev. M. J. Dunkley, Concord, Mass.; Prof. Samuel W. Cole, Boston; Mr. and Mrs. W. H. Powers, Hyde Park, Mass.

PLYMOUTH.

Nearly two hundred teachers, graduates and former students of the Normal school were present at the alumni reunion Tuesday evening. The following programme was presented: Addresses of welcome, Mrs. Ruth McClure Chase, '91, president of the alumni association; Principal James E. Klock; "The Early Seventies," Mrs. Marie Dolloff Hodge, '75; "The Later Seventies," Mrs. Florence Russell Glynn, '78; piano solo, Mrs. Rena Merrill Harri-man, '85; "In Memoriam," Miss Nettie McQuesten, '87; "News from the Nineties," Mrs. Effie Kibby Gore, '94.

At the business meeting of the Alumni association the following officers were elected: Caroline W. Mudgett, '88, president; Emma S. Page, '95, vice-president; Viola McClure, '85, secretary and treasurer; Emma Merrill Foss, '72, Flora Adams Spaulding, '84, Minnie M. Libby, '04, executive committee.

At Portsmouth the Christian Shore section held an Old Home Day celebration as in past years.

RAYMOND.

President, James M. Healey; vice-presidents, W. J. Dudley and Mark Scribner; secretary, A. H. Thompson; treasurer, O. T. Brown; executive committee, W. B. Gile, D. H. Griffin, D. W. Whittier.

Special religious services were held morning and evening of Old Home Sunday, the preacher being Rev. A. Merrill Osgood of Gloucester, Mass., a native of Raymond.

Monday evening the class of George S. Chase held their annual reunion and met their former teacher in the Congregational church. Tuesday about forty of the pupils of Lucy A. Burnham held a reception in the morning in the Congregational church. At noon they repaired to Pythian hall, where dinner was served. Their teacher was detained by illness and was not able to be present.

RICHMOND.

President, Leason Martin; vice-president, Frank Amidon; secretary, Cora F. Martin; treasurer, Stephen A. Bullock; executive committee, Charles Pickering, Eugene Ballou, L. D. Siminoe.

Richmond's Old Home Day, postponed from Saturday on account of the weather, was held on Monday with great success.

A large number of persons were assembled at 10 o'clock in the morning, at the spot, southeast of Richmond Four Corners, where Eliza Ballou was born. A monument had already been placed there, whose legend speaks for itself:

HERE WAS BORN
SEPT. 21, 1801,
ELIZA BALLOU,
WHO BECAME THE WIFE OF
ABRAM GARFIELD,
AND THE MOTHER OF
JAMES ABRAM GARFIELD,
TWENTIETH PRESIDENT
OF THE
UNITED STATES.

Leason Martin, Esq., opened the simple dedicatory exercises by stating the object of the gathering and some of the facts in connection with the erection of the monument.

Rev. J. L. Seward, D. D., of Keene, was then asked to offer prayer, after which a poem was read, written by Miss C. E. Bolles. Rev. Dr. Seward was then introduced for an address.

Irving Garfield, Esq., of Boston, son of President Garfield, spoke briefly but gracefully.

After dinner, at the formal Old Home Day exercises, the same speakers were heard and recitations, songs and baseball diversified the afternoon.

RINDGE.

President, Rev. Granville Yager; vice-presidents, Charles F. Platts, Francis D. Converse, Melvin Adams; secretary, Mrs. Charles F. Platts; treasurer, Warren W. Emory; executive committee, Jason L. Perry, John D. Whitney, Arthur M. Hale, Henry W. Wellington, Arthur E. Taggart.

Exercises were held on Old Home Sunday at Rindge Center, West Rindge and East Rindge.

Monday morning was devoted to band concerts. At noon the formal exercises began, Rev. Granville Yager presiding. Henry W. Fletcher gave the address of welcome, and Rev. George G. Williams offered prayer. Governor Nahum J. Bachelder gave the oration of the day, followed by a brief reception in his honor, and dinner.

After dinner, at which Professor Tyler of Smith college offered the blessing, addresses were made by Melvin Adams, Herbert O. Hadley of Temple, state master of the grange, and Hon. Ezra S. Stearns of Fitchburg, Mass., a native of Rindge and the town historian.

Music and baseball closed the afternoon.

Occasions allied to Old Home Week were the annual reunion of the Old North School association and of the teachers and scholars of District No. 3.

ROLLINSFORD.

Three Rivers farm, the country estate of Edward W. Rollins, member of the Boston banking firm of Edward H. Rollins & Sons, was the scene on Saturday of a happy reunion of the Rollins family, the first gathering in more than 20 years of the descendants of James Rollins, the first American ancestor of those bearing the name in this country. The three brothers, Edward W., Montgomery and ex-Governor Frank W. Rollins, sons of the late Senator Rollins, had charge of the arrangements, and nothing was left undone by them to make the reunion a success. Sixty members of the Rollins family and a number of invited guests were present.

The annual reunion of the Davis family of Roxbury was held August 18th at the Harris grove, Spragueville pond.

The descendants of Jonathan Locke of Rye held their 14th annual reunion in the town hall at Rye August 24.

SALEM.

President, Fred O. Wheeler; vice-presidents, the selectmen; secretary, F. D. Davis; treasurer, John C. Crowell; executive committee, John P. Atwood, Charles S. Woodbury, David S. Emery.

No formal town celebration was held in Salem in 1904, but Canobie Lake park was the scene of many family and society reunions.

SALISBURY.

President, James S. Shaw; vice-presidents, Frank P. Drew, B. W. Sanborn; secretary, Charles A. Green; treasurer, Edwin D. Little; executive committee, Justin T. Stevens, Leander N. Sawyer, Lewis C. Shaw.

There was no town celebration in Salisbury, but Bartlett grange appropriately observed the occasion in Academy hall, which was well filled with people who were highly entertained. James Shaw, president of the Old Home Day, gave the address of welcome. Charles E. Foote of Penacook read a fine historical paper. Mrs. Daugherty and Deacon Little also read papers. C. F. Greenough of Wamseon, O., G. E. Fellows and D. J. Calef also made interesting remarks. Miss Edith Drew and Mr. John Rogers rendered musical selections, and Edward Buzzell gave a large selection of pieces on his graphophone. It was a very interesting occasion.

SANDWICH.

President, Herbert E. Moulton; vice-presidents, Charles W. Donovan, Henry F. Dorr, Alonzo McCrillis; secretary, Mrs. E. O. Marston; treasurer, Edwin M. Heard; executive committee, Dr. A. B. Hoag, A. S. A. Gilman, Mrs. Maud Bryar, Mrs. Charles Blanchard, Mrs. Dora Trašk.

On Wednesday in Sandwich there was an Old Home Day picnic at Bear Camp River park during the forenoon, which was largely attended. At 2 o'clock in the afternoon there were public exercises in the town hall. The programme was: Prayer by Rev. William Woods of Lawrence, Mass.; song by Mrs. Ella Smith Blanchard; addresses by Herbert E. Moulton, Horace Hadley of Washington Courthouse, Ohio; Rev. Edmund M. Vittum of Grinnell, Iowa; reading by Miss Belle Forbush of Sandwich; addresses by Albert A. Folsom of Boston; Cyrus Beede of Oskaloosa, Ohio; Judge W. B. Fellows of Tilton.

SHELBURNE.

President, R. P. Peabody; vice-presidents, William M. Watson, Albert G. Lary; secretary, James Simpson; treas-

urer, Elery Wheeler; executive committee, Mrs. R. P. Peabody, Mrs. Emma Leighton, and Elery Wheeler.

At Shelburne Old Home Day was observed Thursday with appropriate exercises, nearly 600 persons being in attendance, a large collection of relics of the early settlers of the town being on exhibition, and a band from Gilead, Me., furnishing an excellent band concert.

Among the speakers of the day were Judge A. R. Evans of the probate court of Coos county, Professor Emmerton of Harvard college, Jesse F. Libby of Gorham, and S. B. Hubbard of Cambridge, Mass., a native of the town.

A game of baseball was played between the teams from Gorham and Shelburne, the home team winning.

SOMERSWORTH.

President, Heartley S. Chapman; vice-presidents, Mrs. H. B. L. Perkins, Hon. Freeman A. Hussey; secretary, Fred R. Wentworth; treasurer, Arthur J. Seavey; executive committee, John N. Haines, Sidney F. Greenwood, Edmund S. Boyer, Daniel Hodsdon, Dr. L. E. Grant, William E. Pierce.

At Somersworth the elaborate observance of Old Home Week began Sunday with Old Home Week services in the several churches in the morning, and a union service in the Free Baptist church in the evening.

Tuesday was reunion day, with an old-fashioned picnic dinner at noon.

President Hartley S. Chapman of the Old Home Week association was master of ceremonies. In opening the after dinner programme he called attention to the fact that this was a double celebration, that of Old Home Week and the 150th anniversary of the organization of Somersworth as a town.

Prayer was offered by Rev. George S. Chadbourne of Malden. Mayor Freeman A. Hussey gave the address of

welcome, and was followed by the singing by a quartette of "Days Gone By," composed for the occasion by Daniel Hodsdon, chairman of the picnic committee. The quartette was Mrs. Olive Hill Houston of Dover, soprano, Mrs. John N. Haines, contralto, Dr. Willis, tenor, and Daniel Hodsdon, bass.

The Old Home Day poem, composed by Mary P. Rollins, was read by her niece, Elizabeth Putnam Pope. The poem was followed by a song by Dr. J. J. Woodman of Washington. The historical address was then delivered by Mrs. William D. Knapp, widow of Judge Knapp. Her subject was "Somersworth as a Parish, as a Town, and as a City."

William E. Pierce, assistant secretary, read letters from former residents.

Ex-Governor Rollins was the first to be called upon for a speech. As he appeared on the platform the assemblage gave him three rousing cheers and the Chautauqua salute was followed by David M. Thompson of Providence; George F. Rollins of Falls Church, Va.; Mrs. Laura A. W. Fowler of Dedham, Mass.; and Dr. Francis J. Woodman of Washington.

The exercises closed with another selection by the quartette and the singing of "America" by all present.

In the evening the reunion of the Somersworth high school alumni was held at the high school building. A member of the reunion committee stated that nearly every class from 1847, the first, down to 1904 was represented. The classes gave a reception to former teachers of the school, and these were present to renew the school day old acquaintance: Mrs. Laura A. W. Fowler, who taught 50 years ago; Mrs. Judge Knapp, Mrs. John T. Rand of Boston; Mrs. Ellen Legro Tenney of Albany; Mrs. Amanda Cilley, and Miss Moulton of Exeter. The occasion was a most enjoyable one, and closed with dancing.

On Wednesday the weather conditions were perfect and the programme was most elaborate. All places of business

were closed and the city was thronged with people who came from far and near to witness and participate in the exercises.

All of the principal buildings in the business part of the city were profusely decorated with bunting and large decorated signs bearing the word "Welcome," were conspicuously displayed on Market and High streets.

The feature of the day's programme was the industrial parade, which was held in the forenoon. It comprised over 100 decorated teams gotten up to represent the various industries and business places of the city. The parade, headed by a platoon of Somersworth's "finest" and the Somersworth City band, started at 10.15 o'clock a. m. and marched over the principal streets of the city.

At the close of the parade an excellent programme of sports was held on High street, including a bicycle road race. At the close of the sports a ball game was held at Central park between the local team and the Dovers.

In the evening a river carnival was held on the Berwick river.

The celebration ended Thursday with a firemen's muster.

SPRINGFIELD.

President, Elwin F. Philbrick; vice-presidents, Joseph C. Severance, Burton E. Sanborn; secretary, Mrs. Florence L. Clark; treasurer, Marshall P. Clark; executive committee, Charles McDaniel, Joseph Brown, Mrs. Emma Tenney.

At Springfield Old Home Day was celebrated in the town hall Monday evening by a musical and literary entertainment under the direction of U. L. George, chairman of the entertainment committee. The programme: Address of welcome, President of the Old Home Association E. F. Philbrick; prayer, the Rev. M. F. Johnson, Nashua; recitation, Miss Maud Hill; soprano solo, Mrs. Nellie Bolia,

Laconia ; recitation, Lucia Goodhue ; selection, chorus of children ; recitation, Mrs. Hattie Fletcher, Lakeport ; song by chorus ; "Home Forever," dedicated to former Governor Rollins ; reading, Miss Grace Collins ; violin solo, John L. George ; recitation, Elroy Heath.

The new church bell was dedicated with appropriate exercises on Sunday.

STRATHAM.

At the inception of the Baptist church, but with the fullest co-operation of the townspeople in general, Stratham on Wednesday made its first Old Home observance by an all-day picnic on Stratham hill. The nearly 500 attendants included many old residents and visitors.

The morning was spent in social reunion and enjoyment of the charming prospect commanded by the hill, Mt. Washington being clearly visible in the early part of the day. Deacon E. M. C. Lane, 89, unaided, scaled the hill, of which he is the owner.

A basket lunch was served at noon, and the women of the church dispensed ices and light refreshments.

The literary exercises began at 2 in the grove on the slope of the hill, with Rev. F. J. Franklin, pastor of the Baptist church, as president of the day. Admirable addresses extolling Stratham's past and expressing high hopes for her future, were made by Col. Richard M. Scammon, Hon. Joseph C. A. Wingate, and Rev. George E. Lake of the Congregational church. The singing of "America" closed the exercises.

The single men defeated married men, 12 to 9, at a baseball game later in the afternoon.

SOUTH HAMPTON.

President, Benjamin R. Jewell ; vice-presidents, George W. Fitts, Jacob Eaton, John Paige ; secretary, Miss Dora

I. Jewell; treasurer, Frank M. Jewell; executive committee, John O. P. Clifford, Moses J. Eaton, George B. Palmer, Frank B. Swain, Frank P. Forsaith.

South Hampton's Old Home Week reunion was held on the green in front of the town buildings at the hill, August 25. At noon an old-fashioned dinner was served. Before the dinner the home team was defeated at baseball by a team from Amesbury 8 to 7.

At the Baptist church the exercises of the afternoon commenced at 2 o'clock and opened with an organ voluntary by Miss Kate White, followed by prayer by Rev. Clarence S. Eaton, of Medford, Mass. The programme included singing by S. M. Prescott, Fred B. French and the Misses Julia Floyd, Myra Kelley and A. M. Delaware. Letters of regret were read by President Benjamin R. Jewell.

Addresses were made by president Jewell, who spoke of the early families of the town and its early history; Jacob T. Choate, of Amesbury, a teacher in the district school of the town 30 years ago; George W. Fitts, vice-president of the Old Home Week association, and the town's oldest citizen, who closed his address by reciting a poem he learned 85 years ago when a boy of 8 years; Rev. B. F. Eaton, of Medford, who recalled many interesting events of his boyhood days in the old town; Albert Downing of Everett, Mass., who recited an original poem.

The exercises closed with remarks by L. B. Philbrick of Salem, Mass., who closed his address with an invitation to the president of the association to draw upon him in aid of the only town church, and remarks by Samuel C. Prescott of Cambridge, and Mrs. Martha E. Follette of East Kingston.

STRAFFORD.

President, George W. Boody; vice-president, Warren H. Perkins; secretary, Hiram S. Hill; treasurer, William

A. Brown; executive committee, John W. Cater, James H. Stiles, Charles F. Foss.

Strafford voted not to hold any celebration in 1904.

SUNAPEE.

Old Home Day services were held at the M. E. church Sunday. The morning services were in charge of the pastor, Rev. G. N. Dorr. In the evening, Hon. John H. Bartlett of Portsmouth, gave the address. In both services tender memories of home were awakened by the speakers.

The annual water carnival at Little lake, Sunapee, and the annual fair of the Cottage Owners' association at Blodgett's landing were other Old Home events in this vicinity.

Swanzy and Surry held highly enjoyable town picnics.

The first reunion of the descendants of Solomn Wardwell was held at Sullivan.

The sixth annual meeting of the descendants of Deacon David Batchelder was an event of the week at Seabrook; and in the same town on the previous day was held the annual reunion of the descendants of Nathaniel Weare.

Descendants of Jonathan Nelson of Sutton met in that town on Monday of Old Home Week and formed a family association.

Sons and daughters of New Hampshire in Southern Pines, North Carolina, held an Old Home reunion in their distant "new home" place.

A lawn party was held at Sugar Hill on Friday of Old Home Week.

On the same evening Sanbornton grange held an Old Home meeting.

The ladies of Stoddard held their annual church sale during Old Home Week.

TEMPLE.

The Old Home Week Association of Temple held a very successful meeting at which addresses were delivered and a social time enjoyed.

WALPOLE.

President, T. Nelson Hastings; vice-presidents, Charles H. Barnes, Rear Admiral H. B. Robeson, Patrick E. Griffin; secretary, Thomas B. Peck; treasurer, Josiah G. Belhows; assistant treasurer, Harry B. Hurd; executive committee, Horace A. Perry, George E. Sherman, Willie G. Leonard.

No celebration of Old Home Day was held in Walpole in 1904.

WASHINGTON.

President, Sumner N. Ball; vice-presidents, Willie D. Brockway, Frank Peaslee; secretary, Albert T. Wright; treasurer, George D. Trow; executive committee, William D. Brockway, Isaac Curtice, Alonzo Knight.

The fourth Old Home Day was observed at Washington August 23. The old town hall was filled to overflowing. In the morning a concert was given from the band stand. A game of baseball was played with the Bradford Center nine, the Washingtons winners. After dinner prayer was offered by Alton Farnsworth of Walpole. A very able address was given by Rev. O. P. Wright of Denver, Col., and remarks by Mr. Daniel Farnsworth of Claremont, an old resident of this place, now in his 92d year; Mrs. Julia Duncan from Washington, D. C.; Fred Richards of Lyndeborough; Miss Kitty Gage and several others. There was singing by the East Washington choir, Miss Trecarten and the Newman family from Hillsborough Bridge. A second game of ball was played toward night with the Acworth

nine, the Acworths winning. An old-fashioned lyceum was held in the evening and afterward a dance. "It was one of the best Old Home days we have had."

WEBSTER.

President, Rev. Dr. Arthur Little; vice-president, Henry Austin; secretary, Miss Sarah Sawyer; treasurer, Charles Sanborn; executive committee, William S. Putney, Herbert Call, Arthur French.

Webster's sixth Old Home Day was on Friday at Lake Winnepauket. After dinner Dr. Little made introductory remarks and Rev. J. H. Bliss offered prayer. Singing of the doxology followed, and the president continuing his remarks held his listeners in close attention for several minutes, when he introduced in succession the following speakers: J. C. Pearson of Penacook; Rev. J. H. Larry, formerly of Penacook; John Foster of Manchester, who gave an original poem; Herman Sawyer of Green Bay, Wis.; Walter Sargent of Warner; Warren Abbott of Penacook. Miss Sarah E. Sawyer, secretary, then read letters from the absent, which closed the programme.

WENTWORTH.

President, J. B. Foster; vice-president, Thomas Huckins; secretary, Miss Persis Plummer; treasurer, Mrs. Cyrus Downing.

Old Home Day on Thursday was favored with the best of weather this year and a large attendance resulted. A fine dinner was served in the handsomely decorated town hall. The exercises following opened with the invocation by Rev. F. E. Mills, and the address of welcome by President Foster. Other speakers were Elmer E. Lyon, Rev. Mr. Mills, Calvin T. Shute, and ex-Congressman Charles H. Turner. Orchestral and vocal music and readings by Miss Ruby Hobbs of Lynn, Mass., were interspersed. In

the evening a choice concert programme was rendered, including the reading by Mrs. E. M. Davis of several poems by Miss Mary M. Currier, Wentworth's gifted writer of verse.

WEST CONCORD.

On Old Home Sunday the Congregational church at West Concord was packed to the doors by persons from all parts of the city at the Old Home Week service.

The church was beautifully decorated with flowers and at the front hung a large motto, "Old Home Sunday," the work of Mrs. Eastman, more than 80 years old.

Moses H. Farnum, who is nearly 94 years of age and the oldest living native of Concord, attended the service.

The sermon was by Rev. T. C. H. Bouton of Henniker, who is a grandson of Rev. Nathaniel Bouton, for 42 years pastor of the old North Congregational church, which was the first church established in Concord, Dr. Bouton being its second minister. The sermon dealt largely with contrasts between the past and present, and made a strong claim in favor of the old way of keeping the Sabbath as opposed to the present.

A very enjoyable part of the service was "Ye Old Time Music" by a choir of 25 voices, led by O. W. Crowell. In the choir were several singers more than 60 years of age. Another feature was the presence of Rev. and Mrs. John L. Dube, native Zulus from South Africa. Mrs. Dube sang a solo, "There is No Night There," and Mr. Dube, who is at the head of an industrial educational school in Africa, made a short address. Instrumental music was by Mabel Gay, organist, and John M. Buzzell, cornet soloist. The entire service was planned and directed by the pastor of the church, Rev. Henry M. Goddard, who in opening spoke very feelingly of the great good which the Old Home Week idea has accomplished.

WESTMORELAND.

President, Willard Bill, Jr.; vice-presidents, A. A. Whitman, C. K. Cobb; secretary, William J. Reed; treasurer, Henry C. Leach; executive committee, Dr. J. A. Craig, Rev. G. H. French, H. D. Pierce, Fred Cobleigh, E. B. Butterfield, C. L. Manfield, F. W. Hall.

Westmoreland's Old Home Week celebration was ushered in on the evening of the 24th with bonfires, the exercises being held Thursday, the 25th, in the Barker and Farr grove. The attendance was much larger than at any time since the picnic plan was adopted, and the day was delightful, which added much to the enjoyment of the occasion. Spofford band furnished music.

At 1.30 o'clock the literary exercises began. The programme follows: Invocation, Rev. George H. French; solo, "The Old New England Home," sung by Harrie Sprague of Milford, Mass.; words of welcome by Willard Bill, Jr., president of the day; William J. Reed, secretary, read an article on the needs of the town, sent in by Oliver L. Briggs of Boston, which was well received and favorably commented upon. Then followed short speeches from W. A. Graves of Trempelean, Wis.; Rev. Mr. Lock, late of Bulgaria; and Rev. Mr. Ringrose; poem, "The Old Home," by Miss Jeanette Mann of Milford, Mass., read by Miss Mabel Goodnow; solo, "Sweet Home," finely rendered by Miss Ellen Stone of this town and Chelsea, Mass.; the exercises closing by pleasing words by Rev. Mr. Roscoe. Athletic sports were then enjoyed, conducted by Dr. J. A. Craig, to the great amusement of onlookers.

Those from distant states were W. A. Graves and wife, Uniona, Wis.; Mrs. Susie Brown and Mrs. Frank Trager, Rock Falls, Ill.; Mrs. Nellie Dunham, Atchison, Kansas; Mrs. Phila Schoonmaker, Michigan; Mrs. Hannah Adams, Buffalo, N. Y.; Mrs. Huestis Bush, Rochester, N. Y.; Ex-Congressman Clinton G. Babbitt of Beloit, Wis. The

oldest person was Mrs. Mary A. Graves, 93 years old, and the largest family gathering being the Brittons, sixteen being at the old home.

The day closed with a drama finely acted by the young people of the town.

The celebration was a pronounced success and will be continued annually as the years come and go.

WILMOT.

President, Fred E. Goodhue ; vice-presidents, Thomas J. Graney, James A. Richards ; secretary, Harriet K. Whittemore ; treasurer, Harriet M. Woodward ; executive committee, Mrs. M. F. Tewksbury, Mrs. J. F. Emons, Austin E. Langley, Mrs. Benjamin Emons, and Mrs. F. L. Goodhue.

At Wilmot there was a large attendance at the union service Sunday. The Rev. Mr. Cummings conducted the service, assisted by the Rev. Messrs. Thompson of Portsmouth and Tewksbury of Wilmot. W. M. Fulton of Manchester offered remarks.

Old Home Day was celebrated by a basket picnic at the Methodist campground, about 500 being present. The weather was fine. Addresses were made by Prof. John R. Eastman of Andover, Rev. Clarence E. Clough of Lebanon and Rev. John Hale Larry of Penacook. Rev. Mr. Cummings made the opening prayer and Rev. Mr. Richmond pronounced the benediction. A poem written by Miss Stella F. Collins was read by F. E. Goodhue. The preacher's stand was decorated with a flag, ferns, goldenrod and cut flowers. A motto with the word "Welcome," and a banner with the dates "1807-1904" was placed over the pulpit, the date, 1807, denoting when the town was incorporated.

WINCHESTER.

President, James H. Bliss ; vice-president, S. M. Morse ; secretary, James T. Burnap ; treasurer, W. H. Gurnsey ;

executive committee, D. C. Stearns, Miss J. Grace Alexander, Levi Saben, G. Wardwell, M. A. Brown.

Winchester celebrated on Wednesday at Forest lake, with a picnic dinner at noon, literary exercises and baseball in the afternoon, and dancing in the evening. Fine music was provided, and President Bliss conducted the programme, which opened with an invocation by Rev. C. F. Roper and closed with the benediction by Rev. Lucius Hardy.

Prof. G. Arthur Smith was the principal speaker of the day, and was ably assisted by Mr. Tinker of New London, Ct., Rev. Lucius Hardy of Connecticut, Hosea W. Brigham, Granville Wardwell, Miss Vryling Buffum, Alfred Saben, Ned C. Wardwell, Frank Amidon of Richmond, V. K. Leach of Keene, and Dr. George W. Pierce.

WINDHAM.

At Windham the Old Home Day celebration Wednesday was a conspicuous success. The weather was simply perfect, the attendance was large, and everybody appeared to enjoy the occasion to the full. The town hall was the meeting place, and was the scene of much sociability during the day. After a picnic dinner, the literary and musical programme was rendered in the upper hall, Joseph P. Crowell presiding. An "Old Home" quartette, composed of Mrs. G. F. Plummer and Mrs. F. A. Hardy of Londonderry, Isaac A. Cochrane of Melrose, Mass., and Rev. A. P. Watson of Bedford, beautifully sang several appropriate selections. Remarks were made by Rev. J. A. D. Hughes of Nashua, Rev. Albert Watson, Joseph P. Crowell and William C. Harris of Windham, and others would have spoken but for the lateness of the hour. A poem written by Mrs. M. A. A. Senter was read by Mrs. M. J. H. Smith. More than 100 persons from out of town registered, and there were many others who failed to do so.

WOODSTOCK.

Old Home Sunday was appropriately observed at both Woodstock and North Woodstock. On Thursday there was a basket dinner. The usual speaking exercises were held at Fairfield park, a beautiful pine grove, and were largely attended, not only by all the year round residents and the home-comers, but by scores of summer constituents. President Elmer E. Woodbury of the Woodstock Old Home association officiated as president of the day and delivered the address of welcome. Prayer was offered by the Rev. J. B. Conrad, pastor of the Woodstock Baptist church.

Addresses were delivered by Prof. Karl P. Harrington of Orono, Me.; Prof. Charles H. Raymond of Lawrenceville, N. J.; the Rev. Dr. C. E. Perkins, pastor of the North Woodstock Free Baptist church, and Albert W. Sawyer, proprietor of the Fairview house. Professor Harrington and Professor Raymond are both members of North Woodstock's cottage colony. E. W. Dean of Malden, another summer guest, rendered a cornet solo, Miss Bertha F. Parker playing the accompaniment. The exercises closed with the singing of "America," in which every one joined.

The annual meeting of the Wolfborough high school alumni was held on Tuesday of Old Home Week.

At Warner on the same evening the Christian Endeavor society gave a lawn party.

Warren celebrated the beginning of the week with a huge bonfire on the summit of Mount Moosilauke.

A lawn party was held at Wakefield Wednesday evening for the benefit of the public library, whose building was dedicated during Old Home Week of 1903.

An entertainment in the Walpole summer lecture course was held on the same evening.

An Old Home Week play, "Tempest and Sunshine," written by Luther M. Langdell of Wilton, was given by amateurs of that town on Friday evening at Wilton Center.

REPORT
OF
CATTLE COMMISSIONERS
1903 AND 1904.

BOARD OF CATTLE COMMISSIONERS.

IRVING A. WATSON, President	.	.	Concord.
NAHUM J. BACHELDER, Secretary	.	.	Concord.
HERBERT O. HADLEY	.	.	Temple.

ADVISORY BOARD.

STATE BOARD OF HEALTH.

NAHUM J. BACHELDER	.	.	.	Concord.
GRANVILLE P. CONN	.	.	.	Concord.
EDWIN G. EASTMAN	.	.	.	Exeter.
IRVING A. WATSON	.	.	.	Concord.
ROBERT FLETCHER	.	.	.	Hanover.
CHARLES S. COLLINS	.	.	.	Nashua.

STATE BOARD OF AGRICULTURE.

GOV. NAHUM J. BACHELDER	.	.	.	Concord.
JOSEPH B. WALKER	.	.	.	Concord.
ALDEN F. SANBORN	.	.	.	Fremont.
THADDEUS W. BARKER	.	.	.	Nelson.
DANIEL C. WESTGATE	.	.	.	Plainfield.
EDWARD E. BISHOP	.	.	.	Bethlehem.
GEORGE H. WADLEIGH	.	.	.	Tilton.
CHARLES B. HOYT	.	.	.	Sandwich.
HERBERT O. HADLEY	.	.	.	Temple.
JOSEPH D. ROBERTS	.	.	.	Rollinsford.

EXECUTIVE COMMITTEE STATE GRANGE.

HERBERT O. HADLEY	.	.	.	.	Temple.
EDWARD E. BISHOP	.	.	.	.	Bethlehem.
DANIEL C. WESTGATE	.	.	.	.	Plainfield.
GEORGE H. YEATON	.	.	.	.	Rollinsford
GEORGE R. DRAKE	.	.	.	.	Manchester.

VETERINARIANS.

WILLIAM T. RUSSELL	.	.	.	.	Nashua.
ROBERT J. MACGUIRE	.	.	.	.	Concord.
GEORGE G. MACGREGOR	.	.	.	.	Whitefield.
F. V. BARRETT	.	.	.	.	Peterborough.
LEMUEL POPE, JR.	.	.	.	.	Portsmouth.
GEORGE W. COPP	.	.	.	.	Tuftsborough.
WALTER B. LORING	.	.	.	.	Milford.
B. M. FLINT	.	.	.	.	Lyme.
JAMES HART	.	.	.	.	Concord.
W. S. EATON	.	.	.	.	Lowell, Mass.
G. E. CHESLEY	.	.	.	.	Rochester.
S. F. WADSWORTH	.	.	.	.	Keene.
A. L. DODGE	.	.	.	.	Manchester.
G. BICKELL	.	.	.	.	Haverhill, Mass.
R. F. MOORE	.	.	.	.	Lakeport.
F. L. BODWELL	.	.	.	.	Dover.
J. L. RATHBONE	.	.	.	.	Brattleboro, Vt.
C. E. BURCHSTED	.	.	.	.	Concord.

APPRAISERS.

WM. P. BALLARD	Concord.
H. O. HADLEY	Temple.

INSPECTOR.

CHARLES B. HOYT	Sandwich.
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REPORT.

To His Excellency the Governor and to the Honorable Council:

The report of the State Board of Cattle Commissioners, from Jan. 1, 1903, to January 1, 1905, is herewith presented.

It contains the Public Statutes under which the work of the board has been carried out, the orders and regulations issued by the board, an account of the foot-and-mouth disease, the record of inspections made, number of disease animals destroyed, financial statement, recommendations, etc.

CHAPTER 113, PUBLIC STATUTES.

UNITED STATES INSPECTORS.

SECTION 1. The governor is authorized to accept on behalf of the state the rules and regulations prepared by the commissioner of agriculture under and in pursuance of section three of an act of congress approved May 29, 1884, entitled, "An act for the establishment of a bureau of animal industry, to prevent the exportation of diseased cattle, and to provide means for the suppression and extirpation of pleuro-pneumonia and other contagious diseases among domestic animals," and to co-operate with the authorities of the United States in the enforcement of the provisions of such act.

SECT. 2. The inspectors of the bureau of animal industry of the United States shall have the right of inspection, quarantine, and condemnation of animals affected with any

contagious, infectious, or communicable disease, or suspected of being so affected, or that have been exposed to any such disease; and for these purposes are authorized and empowered to enter upon any ground or premises. They shall have power to call on sheriffs, constables, and peace officers to assist them in the discharge of their duties in carrying out the provisions of said act of congress; and it is made the duty of said officers to assist them when so requested. The inspectors shall have the same powers and protection as peace officers while engaged in the discharge of their duties.

SECT. 3. All damages and expenses incurred under the preceding sections shall be paid by the United States, and in no case shall this state be liable for any part thereof.

STATE BOARD OF CATTLE COMMISSIONERS.

SECT. 4. The secretary of the state board of agriculture, the master of the New Hampshire state grange of the Patrons of Husbandry, and the secretary of the state board of health, for the time being, shall constitute a board, to be known as the state board of cattle commissioners. If a vacancy in the board shall occur, the governor, with the advice of the council, shall fill it by appointment, and the appointee shall hold office until the vacancy in the office occasioning the vacancy in the board is filled.

SECT. 5. The board shall make investigations in regard to the existence of contagious and infectious diseases among domestic animals within the state, and may make regulations prohibiting the introduction into the state of animals so diseased, and controlling or prohibiting their transportation, and such other regulations as the board deems necessary to exclude or arrest any such disease, and may modify or amend its regulations as the circumstances shall require.

SECT. 6. The board may employ skilled veterinarians and agents and servants to aid in the performance of the duties assigned to the board.

SECT. 7. Any person or corporation who shall violate any of the regulations of the board shall be fined not exceeding one hundred dollars.

SECT. 8. The compensation and expenses of the board shall be audited and fixed by the governor and council, and shall be paid from the state treasury, but all expenses incurred under the provisions of this chapter shall not exceed ten thousand dollars in any one year.

CARE AND DISPOSITION OF DISEASED ANIMALS.

SECT. 9. Selectmen shall cause all horses infected with glanders or other contagious disease, and all other domestic animals infected with contagious diseases, or which have been exposed to such diseases, to be collected in some suitable place or places and kept isolated from other animals so long as may be necessary to prevent the spread of the diseases.

SECT. 10. In the performance of the duties prescribed by the preceding section, the selectmen shall be governed by the regulations and directions that may be made or given on the subject by the state board of cattle commissioners.

SECT. 11. The state board of cattle commissioners, or, if they have not taken cognizance of the case, the selectmen of the town in which the animal is, may order any domestic animal to be killed and buried, which, in the opinion of a veterinary surgeon selected by them, has a contagious or infectious disease.

SECT. 12. The owners of animals so killed shall be entitled to recover of the town the value of such animals in their diseased condition, if they had been owned in the state three months at least before the disease was detected. The state board of cattle commissioners or the selectmen, as the case may be, shall cause the value to be ascertained by the appraisal of three competent and disinterested per-

sons selected by them, who shall be sworn to the faithful discharge of their duties.

SECT. 13. In case the owner is aggrieved by the appraisal, he may appeal by petition to the supreme court within thirty days after he is notified of the appraisal. He shall notify the town of his appeal, and enter and prosecute it as he would if it were a civil action at law wherein the same amount of damages was claimed, and judgment shall be rendered therein in like manner.

SECT. 14. If upon such appeal he recovers a larger sum than the appraisers awarded him, he shall recover his taxable costs; otherwise he shall pay costs.

SECT. 15. All damages and expenses incurred under the six preceding sections, except expenses incurred by the state board of cattle commissioners, shall be paid by the town in the first instance; but four-fifths thereof shall be reimbursed to it from the state treasury. The governor and council shall audit all claims thus presented, and the governor shall draw his warrants upon the treasurer for the amounts allowed, in favor of the towns entitled thereto.

PRECEDENCE IN AUTHORITY.

SECT. 16. In cases where United States inspectors, state commissioners, and selectmen, or any two of such boards, take action with reference to the same subject matter under the provisions of this chapter, they shall have precedence in authority in the order above named.

PENALTIES IN CERTAIN CASES.

SECT. 17. Any person or corporation who shall bring into the state between the twentieth day of May and the twentieth day of October, any Texas or Cherokee cattle that have not been kept north of the Ohio or Missouri river during the winter immediately preceding, shall be

fined not exceeding twenty-five dollars for each animal so brought into the state. The term Texas or Cherokee cattle shall be construed to mean the native cattle of Texas and Louisiana and the classes of cattle known under those names.

SECT. 18. Any person who shall expose, or suffer to be exposed, in any highway, public place, or pasture, any horse affected by the disease know as glanders, shall be fined not exceeding fifty dollars for each offense, for the benefit of the town or city where the offense is committed.

SECT. 19. Any person exposing any domestic animal as aforesaid, affected with any other contagious or troublesome disease, shall be fined not exceeding twenty-five dollars for each offense, for the benefit of the town.

SECT. 20. It shall be the duty of selectmen and police officers of towns in which any of the offenses mentioned in the three preceding sections shall be committed, to cause the offenders to be prosecuted.

AMENDMENT OF 1893.

At the session of the legislature of 1893 the following amendment was passed:

SECTION 1. The owners of cattle killed by order of the state board of cattle commissioners shall recover of the state one-half the value of such animals upon a basis of health, said value to be ascertained by a disinterested appraisal, provided they have been owned in the state three months at least before the disease was detected,

SECT. 2. All acts and parts of acts inconsistent with this act are hereby repealed, and this act shall take effect upon its passage.

ORDERS AND REGULATIONS ISSUED BY THE BOARD UNDER THE LAW.

All of the following orders and regulations are now in force except in so far as they may have been modified by subsequent orders.

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

CONCORD April 1, 1895.

To Boards of Selectmen :

In order to avoid misconstruction of the statutes of New Hampshire for the suppression of contagious diseases among animals, boards of selectmen, before taking action, will please report such cases as appear of sufficient importance to need attention, to the State Board of Cattle Commissioners, giving as full description of symptoms and conditions as possible, together with the name of the owner and location of the animals.

This board will give attention to cases reported, and take such action under the statutes as their importance seems to demand.

Respectfully,
IRVING A. WATSON, President.
N. J. BACHELDER, Secretary.

QUARANTINE REGULATIONS.

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

CONCORD, July 14, 1896.

GENERAL ORDER No. 3.

1st. General Order dated January 11, 1892, and General Order dated January 19, 1892, are hereby repealed.

2d. All persons and companies are hereby prohibited from bringing or driving neat cattle into the state of New Hampshire without a permit from this board.

3d. All neat cattle brought or driven into the state of New Hampshire under a permit from this board are hereby placed in quarantine upon arrival in the state until identified and released.

4th. Selectmen of towns and cities of New Hampshire are hereby authorized to seize and hold in quarantine any neat cattle coming into the state without a legal permit, and notify this board at once of such action.

5th. Permits to bring or drive neat cattle into New Hampshire will be issued only upon the result of the tuberculin test, to be applied and reported under such regulations and forms as will be furnished upon application to this board.

6th. This order is issued under authority of chapter 113 of the Public Statutes of New Hampshire, and all violations will be vigorously prosecuted.

7th. This order shall take effect on the fifteenth day of July, 1896.

IRVING A. WATSON, President,
N. J. BACHELDER, Secretary,
Board of Cattle Commissioners.

The following explanatory circular was issued in connection with the above order :

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

To Whom It May Concern :

The quarantine regulations issued by the board of cattle commissioners of the state of New Hampshire against all cattle outside of the state are made necessary by the action already taken in the same line by the authorities of other New England states. Evidence has been submitted to this board that animals, failing to pass the test and therefore debarred from those states, are being brought into New Hampshire and are contributing to our milk supply, to the injury of the healthfulness and reputation of New Hampshire dairy products.

Persons desiring to bring cattle into New Hampshire will be furnished upon application with the necessary blanks upon which to forward the result of the test, said test to be made by any person who is satisfactory to the cattle commissioners of the state in which such test is made. Upon arrival in this state the cattle will be identified and released as soon as practicable by this board or its representative.

In making the report of the tuberculin test, when applying for a permit, both the original and duplicate reports are to be made out and forwarded to this office without being detached from the blank permit.

BOARD OF CATTLE COMMISSIONERS,

Concord, N. H.

MODIFICATION OF QUARANTINE ORDER.

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

GENERAL ORDER No. 4.

General Order No. 3, dated July 14, 1896, is hereby modified as follows:

On and after this date, unless otherwise ordered, neat stock will be admitted to the state of New Hampshire for pasturage or for domestic use under the following conditions:

1. Applications for permit to bring cattle into New Hampshire for pasturage or for domestic use must be made upon blanks furnished by this board.

2. The owner or drover of said cattle must state upon said application that they are brought into the state for pasturage, or for domestic use.

3. The owner or drover of said cattle must furnish upon said application the certificate of a veterinarian, who is a regular graduate of a veterinary institution, or who is recommended by the cattle commissioners of the state from which the cattle are sent, stating that the cattle have been subjected to a physical examination, and no symptoms of tuberculosis or other contagious disease are found.

4. Applications from Massachusetts must also state that the cattle have been tagged by the Massachusetts Cattle Commission, which will entitle them to return to that state without re-examination, and must be indorsed in this respect by the Massachusetts Cattle Commission, or an agent of said commission.

5. This order will take effect April 1, 1897, and remain in force until revoked by this board.

N. J. BACHELDER,
Secretary New Hampshire Board of Cattle Commissioners.

The following explanatory circular was issued in connection with the modification order :

STATE OF NEW HAMPSHIRE.

OFFICE OF THE STATE BOARD OF CATTLE COMMISSIONERS.

To Owners and Drovers of Stock :

The inclosed order modifies the previously existing regulation in regard to bringing neat stock into New Hampshire for pasturage, inasmuch as it allows a physical examination instead of requiring the tuberculin test. The application for permit must be made to the board upon the application furnished by this board, and no neat cattle can be legally admitted for pasturage until said application has been properly filled out and filed with this board, and the permit issued in due and regular form. In short, this order simply allows the report of the physical examination to be filed with this board instead of the report of the tuberculin test, and a permit to bring cattle into New Hampshire for pasturage or other purposes is just as necessary as before the issuing of this order.

Selectmen and other officials have full authority to proceed against violators of this and the previous order as modified, the same as before, and all parties will govern themselves accordingly.

N. J. BACHELDER,
Secretary New Hampshire Board of Cattle Commissioners.

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

CONCORD, August 25, 1903.

*To Transportation Companies, Stock Dealers and Owners,
and All Persons to Whom It May Concern :*

1. The order of the State Board of Cattle Commissioners issued under date of November 28, 1902, establishing certain quarantine regulations on account of foot-and-mouth disease, is hereby revoked.

2. Sheep, goats, swine, and all other domestic animals excepting neat cattle, may be brought into this state without a permit from the State Board of Cattle Commissioners.

3. No neat cattle from any state, territory, district, or country shall be brought into the state of New Hampshire except upon a permit issued by the State Board of Cattle Commissioners.

4. All neat cattle, excepting calves under six months of age, to be brought into New Hampshire from any state, territory, district, or country for any other purpose than pasturing or exhibition must first pass the tuberculin test at the hands of a competent and regularly educated veterinary surgeon, or one recommended by the cattle commissioners of the state from which the cattle are to be sent. Upon receipt of examination papers, showing that the animal is free from tuberculosis, a permit will be issued. Blanks for the use of veterinary surgeons (one for each animal to be tested) will be furnished upon application.

5. Parties desiring to bring neat cattle into New Hampshire for pasturing or exhibition purposes should apply to this board for blank forms of application for permit, as there are certain conditions to be complied with; the ani-

imals must pass a physical examination at the hands of a competent and regularly educated veterinary surgeon, or one recommended by the cattle commissioners of the state from which the cattle are to be sent, and the application and veterinary surgeon's certificate must be filed at the office of this board, when a permit will be issued allowing the cattle to enter the state.

6. This order is issued under authority of chapter 113 of the Public Statutes of New Hampshire, and all violations will be prosecuted according to law.

IRVING A. WATSON,

President of New Hampshire State Board of Cattle Commissioners.

Accompanying the foregoing order was the following announcement.

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

CONCORD, August 25, 1903.

To Whom It May Concern :

The inclosed order does not change or in any way affect any existing order or regulation of this board, excepting that issued under date of November 28, 1902, which is revoked.

All the other sections of the appended order are a reiteration of the substance of the regulations now in force as to the requirements that must be met in order to bring neat cattle legally into the state of New Hampshire.

The action taken by the authorities of other states with respect to inter-state transportation of cattle renders it more necessary than ever that the regulations established in this state shall be rigidly enforced.

In corresponding with this board with respect to a permit, it should be stated for what purpose it is desired to bring cattle into New Hampshire, in order that proper blanks may be sent.

No permit is required from this board in order to ship cattle out of the state, but the consent of the cattle commission of the state to which the animals are to be sent, and the approval of the United States Bureau of Animal Industry (Dr. S. E. Bennett, inspector in charge, 147 Milk street, Boston, Mass.) must first be obtained.

IRVING A. WATSON,

President of New Hampshire State Board of Cattle Commissioners.

INSPECTION SERVICE.

While the law enacted to govern this matter confers upon the executive officer of the state board of health, the state board of agriculture, and state grange, the authority in the suppression of contagious diseases among domestic animals, yet all action taken and money expended has been with the approval of the several organizations named and by the advice of the governor and council. Every case coming to the attention of the board has been investigated and such action taken as the policy of the board demanded. All applications to the board for inspection of herds within the state have been given attention by forwarding to the parties making application a blank form of which the following is a copy:

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

APPLICATION FOR CATTLE INSPECTION.

To the State Board of Cattle Commissioners, Concord, N. H.,

GENTLEMEN: — I hereby make application for an official inspection of my herd of cattle in regard to which I make the following statement:

My entire herd consists of.....
 Number showing disease?.....
 The disease suspected is.....
 First noticed symptoms of disease about.....

 The symptoms stated in full, are.....

These cattle are in my stable, located about.....
 miles from.....the nearest
 railroad station.

If the board considers an investigation advisable, and upon a physical examination finds tuberculosis or other contagious or infectious disease in the herd, I hereby authorize the board to take such action as it may deem best; with the understanding that the expense of making the examination is to be borne entirely by the board, and that, according to law, I am to receive one-half the health value of all animals condemned, and destroyed in the presence of myself or of my agent. I also agree to disinfect the stable, and to take other precautionary measures in accordance with the instructions of the cattle commissioners.

.....
 P. O. Address.....

Date....., 190 .

NOTE. All applications will be carefully considered, and when, in the opinion of the board, an examination is warranted, a veterinary surgeon will be sent to make an inspection as soon as the case can be reached in its order, usually within two weeks — often within a few days.

With the blank above given is sent the following:

INSTRUCTIONS.

1. When a herd of cattle, or any animal in it, shows symptoms of tuberculosis, and it is desired that an examination be made by the State Board of Cattle Commissioners, application must be made upon blanks furnished by the board for that purpose, and every symptom fully described.

2. The cattle will not be examined simply upon a suspicion that tuberculosis may be present. The animal must show symptoms of the disease, otherwise an inspection will not be made by the board. A cough, alone, is not sufficiently indicative of tuberculosis, but there must be other symptoms also, chief among them a progressive loss of flesh.

Ordinarily the owner should hold the animal under observation for a sufficient length of time to convince that the disease exists, before bringing the matter to the attention of this board.

3. All investigations authorized by this board will be made by competent veterinary surgeons and will be by physical examination only. The tuberculin test will not be made. For this reason applications for examination should not be made until the case has reached the stage above referred to.

4. As tuberculosis in cattle is of several months duration before terminating fatally, and even before suspected in some instances, the urgency for investigation is never so great as to require telegraphic or telephonic request

for an examination. In all cases the facts should be reported by mail.

5. It is not always possible to make an investigation at once, even when deemed necessary by the board, as other examinations may have priority ; but cases can usually be reached in a few days after the application is received, although sometimes ten days, or even two weeks, may intervene.

6. In the event that any cattle are destroyed by order of this board the state will pay the owner one-half the appraised value of the animal in good health ; but no losses will be paid upon any animal that has not been in the state at least three months prior to the discovery of the disease.

Payments will be made as soon after the close of the quarter as the bills can be audited by the Governor and council. No cattle will be paid for by the state except those destroyed by order of this board.

In connection with this work the language used in a previous report may be repeated :

This plan has been strictly adhered to except in an occasional case where arrangements had been previously made to inspect herds in the immediate vicinity of the person applying, and there was not time to have the blank forwarded and returned. The inspection would then be made without the formal application, as it required no extra expense. Other exceptions have been in the case of applications from boards of health, or in the suspected existence of glanders in horses, both of which have generally had prompt attention.

All applications for inspection in official form, as indicated above, have had careful consideration by the board, and if conditions reported warranted, an official inspection was ordered. The conditions referred to are symptoms of a contagious disease. These applications have generally been given attention in the order in which they were received, and as soon as the exigencies of the case seemed to demand. We have not undertaken to reach cases where

haste was necessary in order to arrive before the death of animals, and have not paid for animals that have died before arrival of the inspector. We have constantly held that the law did not contemplate, primarily, the reimbursement of owners for animals about to die, but that the first object was to destroy such animals as were endangering the health of animals and human beings, and, incidentally, pay the owner such recompense as is provided by the law. We have destroyed all animals found to be tuberculous from a physical examination, whatever their condition, and have attended to all cases within thirty days of receiving official notice, and many of them within one-half this period, but have been to no undue haste to get to animals in the last stages of the disease.

It has not been the practice of the board to make a second inspection in a town immediately after a previous visit, but to make the inspection as soon as the circumstances seemed to warrant, using discretion in the matter. In this work the most distant sections of the state have had equal attention with the central, and no inspection has been withheld on account of any extra expense in reaching the herd. The applications made to the board during 1899 which, upon consideration, were worthy of an investigation, and which are on file as the authority of the board for ordering investigations, are as follows:

DATE OF CATTLE AND STABLE INSPECTIONS,

1903,

WITH NAMES OF OWNERS.

1903,	Jan.	1.	Abner D. Gage,	Salem Depot
	Jan.	3.	William S. Hurd,	Newport
	Jan.	5.	James Lynn,	Nashua
	Jan.	6.	A. H. Carter,	Lebanon
	Jan.	7.	George B. Frizzell,	Colebrook
	Jan.	9.	Albert Lafrance,	Woodsville

1903	Jan. 10.	L. H. Hodgman,	New Ipswich
	Jan. 13.	G. W. Wadleigh,	Tilton
	Jan. 13.	E. R. Cutts,	Milford
	Jan. 14.	Joseph Eaton,	Derry
	Jan. 14.	Murry A. Glines,	Whitefield
	Jan. 16.	H. D. Nichols,	Lempster
	Jan. 17.	Charles R. Brown,	Leavitt's Hill
	Jan. 19.	W. B. Dunlap,	Salisbury
	Jan. 19.	C. L. Adjutant,	Tuftonboro
	Jan. 20.	James T. Starkey,	Westmoreland
	Jan. 21.	Rush Chellis,	Claremont
	Jan. 23.	E. S. Wales,	Loudon
	Jan. 23.	John O. Foss,	Rye
	Jan. 28.	Charles P. Hayes,	Alton Bay
	Jan. 28.	W. R. Park,	Warren
	Jan. 28.	Jesse S. Trow,	Mont Vernon
	Jan. 28.	Frank W. Chase,	Milford
	Jan. 28.	Charles A. Webster,	Milford
	Jan. 28.	J. E. Taylor,	Milford
	Jan. 28.	Jake Alter,	Manchester
	Jan. 30.	B. E. Osgood,	Nashua
	Jan. 30.	Samuel F. Ball,	Lyme
	Jan. 30.	James P. Chase,	Stratham
	Jan. 31.	Frank W. Conway,	New Ipswich
	Jan. 31.	L. H. Underhill,	Orford
	Feb. 3.	George W. Sargent,	Henniker
	Feb. 6.	Enos Clark,	Warren
	Feb. 6.	E. M. Jordan,	Warner
	Feb. 6.	E. F. Simonds,	Dexter
	Feb. 9.	John A. Heath,	Bow
	Feb. 10.	Charles H. Crawford,	Starrking
	Feb. 10.	George C. Evans,	Starrking
	Feb. 11.	John M. Eastman,	Hampstead
	Feb. 12.	B. F. French,	Piermont
	Feb. 13.	D. J. Kenney,	Farmington
	Feb. 13.	H. M. Willoby,	Hudson
	Feb. 16.	David Charait	Hollis
	Feb. 16.	John Bradford,	Enfield
	Feb. 17.	Frank E. Avery,	Hudson
	Feb. 18.	John A. Heath,	Bow
	Feb. 19.	G. H. Webster & Co.,	Thornton's Ferry
	Feb. 24.	B. F. Bean,	Lakeport
	Feb. 27.	E. C. Kendall,	Londonderry

1903.	Feb. 27.	August Helt,	Portsmouth
	Mar. 3.	W. R. Wilson,	Milford
	Mar. 3.	David Broome,	Amherst
	Mar. 4.	H. W. Chellis,	Meriden
	Mar. 6.	Frank Russell,	Greenfield
	Mar. 7.	A. L. Martin,	Jefferson
	Mar. 7.	William B. Ingerson,	Starrking
	Mar. 10.	A. Lombard,	Merrimack
	Mar. 10.	William W. West,	Merrimack
	Mar. 10.	Joseph P. Larkin,	Whitefield
	Mar. 11.	Lyman Hale,	Rindge
	Mar. 11.	Sullivan Co. Farm,	Unity
	Mar. 11.	G. F. Barnard,	Nashua
	Mar. 11.	A. L. Lowe,	Nashua
	Mar. 12.	George E. Hartshorn,	Milford
	Mar. 13.	George E. Bradford,	Enfield
	Mar. 15.	John E. Lang,	Wakefield
	Mar. 16.	H. Cochrane,	Somersworth
	Mar. 18.	A. F. Tuttle,	Nottingham
	Mar. 18.	William Nixon,	Brentwood
	Mar. 18.	J. W. Colcord,	Brentwood
	Mar. 24.	——— Noble,	Amherst
	Mar. 25.	Curtis E. Wood,	Rindge
	Mar. 26.	Horace G. Leighton,	Epsom
	Mar. 30.	Milton Holmes,	Newton
	Mar. 30.	Brooks & Wilson,	Farmington
	April 1.	Vyron D. Lowe,	Randolph
	April 3.	A. A. Junkins,	Reed's Ferry
	April 4.	Albro L. Balch,	New Ipswich
	April 4.	H. P. Matthews,	Chesterfield
	April 6.	George E. Frost,	No. Hampton
	April 6.	J. O. Reed, Jr.,	Mason
	April 8.	Nathaniel E. Huntoon,	Enfield
	April 9.	James E. Favor,	Bennington
	April 10.	H. S. Burleigh,	Tuftonboro
	April 11.	Oliver Griffin,	Chichester
	April 13.	Fred A. Reed,	Newport
	April 17.	Arthur S. Ladd,	Laconia
	April 18.	F. S. Stone,	Greenville
	April 18.	Herman Whitaker,	Mason
	April 20.	J. F. Tenney,	Antrim
	April 20.	C. W. Dodge,	Tamworth
	April 20.	Harry D. Blodgett,	Nashua

1903.	April 20.	Fred. W. Bancroft,	Hudson
	April 21.	John E. Seavey,	Greenland
	April 21.	N. C. Stevens,	Pembroke
	April 21.	Fred Rich,	Lyme
	April 22.	Stanley H. Abbott,	Wilton
	April 22.	Mrs. F. H. Kinsley,	Springfield
	April 22.	H. N. Sawyer,	Atkinson
	April 22.	S. H. Grover,	Atkinson
	April 23.	E. W. Sturtevant,	Center Harbor
	April 24.	Fred P. George,	Kingston
	April 24.	George B. Hall,	Warner
	April 25.	Mrs. J. H. Harvell,	Amherst
	April 25.	Ellery G. Hall,	Whitefield
	April 25.	S. P. Cole,	Lebanon
	April 27.	John P. Howe,	Nashua
	April 27.	John Woods,	Merrimack
	April 27.	J. H. LeGallee,	Hudson
	April 27.	Walter L. Putney,	Peterboro
	April 27.	M. M. Converse,	Lyme
	April 28.	John E. May,	Peterboro
	April 29.	H. A. Garland,	Barnstead
	May 1.	John P. Kemp,	Alstead
	May 1.	David C. Drew,	Milford
	May 1.	W. F. Duncklee,	Francestown
	May 2.	George E. Hartshorn,	Milford
	May 4.	Seth M. Richards,	Newport
	May 6.	E. A. Hildreth,	Whitefield
	May 7.	John E. Seavey,	Greenland
	May 7.	William H. Davis,	Newport
	May 8.	Andrew P. Thomas,	Claremont
	May 8.	George H. Blood,	Hollis
	May 9.	A. L. Benway,	Lempster
	May 11.	M. L. Shurbert,	Northwood Ridge
	May 13.	Mrs. J. W. Gould,	Henniker
	May 15.	James E. Dodge,	Concord
	May 17.	David Butterfield,	Chester
	May 18.	Edwin F. Blanchard,	Smithville
	May 23.	Frank H. Young,	Tuftonboro
	May 23.	C. H. Adjutant,	Wolfeboro
	May 23.	W. S. Pillsbury,	Derry
	May 23.	Frank Cannell,	Glen
	May 25.	Frank A. Burbank,	Hudson
	May 25.	Henry S. Burleigh,	Tuftonboro

1903.	May 27.	A. M. Kelley,	Hill
	May 28.	Perley B. Smith,	Hudson
	May 28.	George A. Saltmarsh,	Bow
	May 28.	L. A. Roby Estate,	Nashua
	May 29.	M. A. Parker,	Hancock
	June 2.	L. D. Jennison,	Northwood
	June 4.	Thomas H. Andross,	Piermont
	June 5.	Charles E. Marsh,	East Kingston
	June 5.	Warren M. Thyng,	Epping
	June 6.	George Guppy,	Dover
	June 10.	J. C. Spaulding,	Quincy
	June 10.	Charles C. Calderwood,	Salem
	June 11.	Mrs. J. W. Gould,	Henniker
	June 11.	Hendall Whitcomb,	Henniker
	June 11.	S. F. Ball,	Lyme
	June 11.	M. M. Converse,	Lyme
	June 12.	Mrs. Barnard McGuiness,	Manchester
	June 12.	H. S. Field,	Merrimack
	June 13.	Gilbert Kniveton,	Greenville
	June 15.	J. A. Crawford,	Hancock
	June 15.	George P. Holt,	Greenville
	June 15.	William W. Watson,	Lakeport
	June 16.	Freelove S. Cook,	Barnstead
	June 17.	O. S. Avery,	Danville
	June 17.	F. F. Reed,	Randolph
	June 18.	Brooks & Wilson,	Farmington
	June 19.	C. A. Welch,	Pittsfield
	June 19.	Elijah Dow,	Pittsfield
	June 19.	J. M. W. Hills,	Antrim
	June 20.	Ed. Flanders,	Weare
	June 23.	Spinney Bros.,	Portsmouth
	June 23.	E. G. Morse,	Enfield
	June 24.	George Blood,	Hollis
	June 24.	H. A. Junkins,	Merrimack
	June 25.	Norris C. Stevens,	Pembroke
	June 25.	Isaiah Jones,	Somersworth
	June 25.	Ira B. Hall,	Meadows
	June 26.	J. W. Stanley,	Lisbon
	June 26.	J. A. Richards,	Goffstown
	June 29.	H. H. Parker,	Milford
	June 29.	L. Chute,	Wilton
	July 1.	W. N. Mayo,	Lyme
	July 2.	J. M. Jackson,	Amherst

1903.	July	2.	W. D. Foss,	Suncook
	July	3.	M. E. Cummings,	Warren
	July	6.	F. A. Stevenson,	Danville
	July	6.	B. H. Plaisted,	Concord
	July	6.	D. C. Bragdon,	Wilton
	July	6.	Josiah Fisk,	Temple
	July	7.	S. A. Converse,	Lyme
	July	7.	Ivan D. Hanchett,	Lyme
	July	9.	Elijah D. Brown,	Deering
	July	10.	Ed. W. Colburn,	Francestown
	July	11.	M. W. Montgomery,	Derry
	July	12.	Mrs. Bernard McGuiness,	Manchester
	July	15.	Augusta A. Coburn,	Salem
	July	17.	C. E. Dorr,	Jefferson
	July	21.	P. A. Ackerman,	Barnstead
	July	22.	A. P. Emerson,	Hampstead
	July	23.	J. B. Rowell,	Lancaster
	July	23.	H. A. Garland,	Barnstead
	July	24.	S. J. Lougee,	Piermont
	July	24.	M. H. Newton,	Bennington
	July	25.	J. O. Whitcomb,	Wilton
	July	25.	C. H. Moore,	Wilton
	July	25.	Perley W. Hadley,	Wilton
	July	25.	A. B. Davidson,	Greenville
	July	29.	Albert T. Stitt,	Mirror Lake
	July	29.	Mark Snow,	Tuftonboro
	July	29.	S. A. Schurman,	Portsmouth
	July	29.	E. O. Ingalls,	Henniker
	July	30.	J. A. Clough,	Concord
	July	30.	Martin S. Brock,	Rochester
	July	31.	M. C. Allard,	Madison
	Aug.	5.	George H. Nichols,	Weare
	Aug.	6.	Herbert Mudgett,	Conway
	Aug.	6.	W. K. Flint,	No. Branch
	Aug.	7.	James Lara,	New Ipswich
	Aug.	7.	R. R. Converse,	Rindge
	Aug.	7.	Charles H. Miller,	Rindge
	Aug.	7.	J. A. Clough,	Concord
	Aug.	10.	Charles A. Earle,	Antrim
	Aug.	11.	William W. Goodall,	Amherst
	Aug.	12.	L. M. Robie,	Piermont
	Aug.	12.	George W. Tarbell,	Brookline
	Aug.	12.	A. W. Elliott,	Farmington

1903.	Aug. 13.	John Coe,	Center Harbor
	Aug. 17.	Charles A. Brackett,	Webster
	Aug. 20.	W. M. Davis,	Hancock
	Aug. 23.	Walter Tenney,	Pelham
	Aug. 26.	John E. Chesley,	Gossville
	Aug. 28.	E. W. Wright,	Windham
	Aug. 28.	John Hay,	Newbury
	Aug. 29.	M. E. Osborn	Peterboro
	Aug. 31.	John Neal,	Tuftonboro
	Sept. 1.	J. A. Richards,	Goffstown
	Sept. 2.	C. W. Durgin,	Francestown
	Sept. 4.	Lewis D. Haines,	Tilton
	Sept. 7.	S. T. Noyes,	Colebrook
	Sept. 8.	George C. Evans,	Starrking
	Sept. 8.	C. A. Robbins,	Whitefield
	Sept. 10.	Nathaniel Day,	Newton
	Sept. 10.	A. L. Gilcreast,	Derry
	Sept. 11.	E. H. Wason,	Nashua
	Sept. 12.	Mrs. S. E. Colony,	Rochester
	Sept. 17.	F. E. Fox,	Derry
	Sept. 17.	John Wentworth,	Hudson
	Sept. 18.	Charles R. Brown,	Leavitt's Hill
	Sept. 25.	Mrs. Carrie Pitts,	Derry
	Sept. 26.	Henry Davis,	Weare
	Sept. 28.	E. L. Trundley,	Goffstown
	Sept. 29.	William B. Wason,	Chester
	Sept. 30.	C. N. Goodell,	Lyme
	Oct. 1.	Merrill Bros.,	Whitefield
	Oct. 1.	Henry Cote,	Claremont
	Oct. 1.	George F. Quimby,	Kingston
	Oct. 3.	Frank W. Chase,	Milford
	Oct. 5.	John W. Hurd,	Rochester
	Oct. 5.	L. A. True,	Canterbury
	Oct. 5.	Maurice Herlihy,	Mont Vernon
	Oct. 6.	Fred E. Davis,	Nottingham
	Oct. 6.	W. H. Kimball,	Derry
	Oct. 7.	Rufus Flanders,	New Hampton
	Oct. 8.	J. O. Seavey,	Rye
	Oct. 9.	F. H. Cross,	Monroe
	Oct. 9.	W. H. Ingraham,	Jaffrev
	Oct. 9.	Lang & Hosford,	Monroe
	Oct. 10.	P. S. Wiggin,	Wolfeboro
	Oct. 12.	Henry Cochran,	Somersworth

1903.	Oct. 13.	G. F. Barnard,	Nashua
	Oct. 14.	George W. Tarbell,	Brookline
	Oct. 14.	E. G. Cilley,	Contoocook
	Oct. 14.	A. P. Emerson,	Hampstead
	Oct. 15.	A. Williams,	Newbury
	Oct. 20.	E. A. Cowles,	Hinsdale
	Oct. 20.	A. E. Felch,	Concord
	Oct. 21.	Arthur Holmes,	Northwood
	Oct. 21.	George A. Bell,	Goffstown
	Oct. 23.	S. Noyes,	Whitefield,
	Oct. 23.	Oliver Tenney,	Greenville
	Oct. 24.	E. W. Breed,	Weare
	Oct. 24.	C. F. Melendy,	Wilton
	Oct. 24.	R. T. Connell,	Hudson
	Oct. 26.	H. E. Spalding,	Nashua
	Oct. 26.	P. A. Mineau,	Claremont
	Oct. 27.	W. S. Batchelder,	Concord
	Oct. 27.	E. M. Lyford,	Canterbury
	Oct. 29.	Charles Decato,	Canaan
	Oct. 30.	S. T. Noyes,	Colebrook
	Oct. 31.	W. Tollaston,	Newmarket
	Nov. 2.	W. E. Haywood,	Temple
	Nov. 2.	E. A. Cowles,	Hinsdale
	Nov. 2.	F. A. Davis,	Hinsdale
	Nov. 2.	J. M. Clark,	Scotts
	Nov. 2.	Harry Clayburn,	Piermont
	Nov. 2.	A. M. Hale,	Rindge
	Nov. 3.	E. M. Bray,	Whitefield
	Nov. 4.	F. W. Hutchins,	Newport
	Nov. 4.	H. A. Garland,	Barnstead
	Nov. 4.	C. I. Chamberlin,	New Durham
	Nov. 5.	A. J. Miller,	Francestown
	Nov. 5.	L. A. Noyes,	Lempster
	Nov. 5.	G. W. & E. E. Hurd,	Lempster
	Nov. 5.	H. I. Berry,	Wolfeboro
	Nov. 6.	E. E. Berry,	Raymond
	Nov. 7.	J. F. Burnett,	Hudson
	Nov. 7.	J. O. Clark,	Concord
	Nov. 7.	Morrill Bros.,	Hudson
	Nov. 9.	C. K. Webster,	East Kingston
	Nov. 10.	T. J. Farmer,	Newbury
	Nov. 11.	S. G. Kelley,	New Hampton
	Nov. 12.	James R. Swallow,	Hollis

1903.	Nov. 13.	F. W. Williams,	Whitefield
	Nov. 14.	L. A. Roby Farm,	Nashua
	Nov. 14.	Frye Bros.,	Wilton
	Nov. 14.	O. D. Fessenden,	Brookline
	Nov. 16.	A. B. Davidson,	Greenville
	Nov. 16.	J. F. Tenney,	Antrim
	Nov. 16.	B. M. Heald,	Temple
	Nov. 19.	Truman Gilson,	Pembroke
	Nov. 20.	George E. Barnard,	Contoocook
	Nov. 20.	E. K. Jewett,	Milford
	Nov. 20.	P. W. Hale,	Greenville
	Nov. 20.	W. O. Morrill,	Rochester
	Nov. 21.	W. R. Webster,	New Durham
	Nov. 23.	Mrs. Annie V. Coburn,	New Durham
	Nov. 23.	S. A. Bullock,	Richmond
	Nov. 25.	F. H. Stearns,	Amherst
	Nov. 25.	John Woods,	Merrimack
	Nov. 26.	W. E. Stearns,	Rindge
	Nov. 27.	E. W. Colburn,	Deering
	Nov. 27.	Alberto Buxton,	Henniker
	Nov. 30.	J. H. Hall,	Nashua
	Dec. 1.	J. A. Clough,	Loudon
	Dec. 1.	John Elkins,	Danville
	Dec. 2.	Edwin Hall,	Concord
	Dec. 2.	Edward Mott,	Lyme
	Dec. 2.	George E. Woodman,	Northwood
	Dec. 4.	William Wilkins,	Nashua
	Dec. 4.	John G. Martin,	Candia
	Dec. 5.	P. P. Ackerman,	Barnstead
	Dec. 5.	Edith Ackerman,	Barnstead
	Dec. 5.	John Wentworth,	Hudson
	Dec. 5.	P. J. Connell,	Hudson
	Dec. 7.	John F. Garland,	Gilmore
	Dec. 8.	Charles S. Colburn,	New Boston
	Dec. 11.	W. E. Blaisdell,	Rochester
	Dec. 11.	Eli G. Metcalf,	Monroe
	Dec. 11.	J. P. Davis,	Meadows
	Dec. 11.	James Hight,	Starrking
	Dec. 12.	Moses Gelo,	Lyme
	Dec. 12.	L. L. Harris,	Hudson
	Dec. 12.	H. H. Blake,	Concord
	Dec. 15.	Lucius H. Nichols,	Lempster
	Dec. 16.	W. S. Stevens,	Atkinson

1903.	Dec. 17.	John J. Hardison,	Rindge
	Dec. 17.	Arthur J. Willand,	Wolfeboro
	Dec. 18.	Lyman Canney,	Brookline
	Dec. 18.	Almon Adams,	Hollis
	Dec. 18.	W. L. Fuller,	Freedom
	Dec. 19.	George M. Batchelder,	Wilton
	Dec. 19.	C. P. Robie,	Candia
	Dec. 28.	Charles Ingalls,	Mont Vernon
	Dec. 29.	George C. Clark,	Orford
	Dec. 29.	A. M. French,	Gilsum
	Dec. 29.	F. D. Messer,	Alstead
	Dec. 29.	L. P. Forristall,	Alstead
	Dec. 30.	Joseph H. Hanson,	Dover
	Dec. 30.	H. M. Pike,	Lyme
	Dec. 30.	E. A. Armstrong,	Whitefield
	Dec. 31.	Mrs. Mary E. Warburton,	Rochester

FINANCIAL STATEMENT, 1903.

COMPENSATION FOR ANIMALS DESTROYED.

311 tuberculous cattle (one-half health value)	\$5,976.00
29 glandered horses (diseased value)	145.00
1 glandered mule (diseased value)	5.00
Total paid for animals destroyed	\$6,126.00

SERVICES AND EXPENSES OF VETERINARY SURGEONS.*

1903.

	Services.	Expenses.	Total.
Robert J. McGuire, Concord	\$506.00	\$313.20	\$819.20
W. T. Russell, Nashua	244.00	123.80	367.80
Lemuel Pope, Jr., Portsm'th	77.50	58.03	135.53
Walter B. Loring, Milford	73.00	22.00	95.00
Geo. W. McGregor, Whitef'd	64.00	62.54	126.54
James Hart, Concord	17.00	7.00	24.00

*Expense of veterinarians include killing and burying condemned animals and railroad, hotel, and livery expenses.

	Services.	Expenses.	Total.
W. S. Eaton, Lowell . .	\$15.00	\$00.00	\$15.00
B. M. Flint, Lyme . .	67.00	14.22	81.22
G. E. Chesley, Rochester .	92.00	26.05	118.05
F. V. Barrett, Peterboro .	103.00	46.35	149.35
S. F. Wadsworth, Keene .	11.00	8.96	19.96
A. L. Dodge, Manchester .	14.00	3.25	17.25
Geo. W. Copp, Tuftonboro .	43.00	11.00	54.00
G. Bickell, Haverhill, Mass.	55.00	27.15	82.15
R. F. Moore, Lakeport .	5.00	3.50	8.50
F. L. Bodwell, Dover . .	12.00	5.84	17.84
J. L. Rathbone, Brat'boro, Vt.	11.00	4.90	15.90
A. J. Herrick, Exeter . .	10.00	2.00	12.00
C. E. Burchsted, Concord .	18.00	14.00	32.00
Total	\$1,437.50	\$753.79	\$2,191.29

SERVICES AND EXPENSES OF APPRAISERS.

William P. Ballard, Concord	\$345.03
H. O. Hadley, Temple	79.65
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	\$424.68

INSPECTOR.

Charles B. Hoyt, Sandwich, services and ex- penses	\$54.87
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OTHER EXPENSES.

Printing, telephone and telegraph service, post- age, and traveling expenses	\$264.34
Clerical expenses	500.00
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	\$764.34
Total expense for the year	\$9,561.18

An itemized exhibit of the foregoing expenditures with accompanying vouchers has been submitted to the governor and council, approved, and placed on file.

DATE OF CATTLE AND STABLE INSPECTIONS,

1904, .

WITH NAMES OF OWNERS.

1904.	Jan.	4.	Moses Duffy,	Milford
	Jan.	6.	Leon K. Parker,	Gilmore
	Jan.	6.	——— Wright,	Windham
	Jan.	7.	Richard Davis,	Kingston
	Jan.	7.	C. Gay,	Windham Center
	Jan.	8.	Luther T. Hall,	Epsom
	Jan.	8.	G. N. Huckins,	East Madison
	Jan.	9.	Freeman H. Cross,	Monroe
	Jan.	11.	John Woods,	Hollis
	Jan.	13.	E. E. Buxton,	Henniker
	Jan.	13.	Alden P. Farrar,	Henniker
	Jan.	15.	Henry Davis,	North Weare
	Jan.	18.	George W. Coburn,	Nashua
	Jan.	23.	John Hatch,	Greenland
	Jan.	23.	E. R. Hall,	Bow
	Jan.	25.	Joseph E. Thompson,	Lyme Center
	Jan.	25.	Nathaniel Pierce,	Milford
	Jan.	25.	Thomas O'Neil,	Milford
	Jan.	26.	S. T. Noyes,	Colebrook
	Jan.	27.	Lyman H. Robie,	Piermont
	Jan.	28.	A. M. Spaulding,	Rumney
	Jan.	30.	H. W. Hoit,	Bedford
	Feb.	1.	Charles L. Russell,	George's Mills
	Feb.	2.	Martin S. Brock,	Rochester
	Feb.	3.	F. P. Rand,	Tilton
	Feb.	7.	J. W. Ford,	Dover
	Feb.	10.	L. E. Murphy,	Salem Depot
	Feb.	10.	W. L. Morgan,	Warner
	Feb.	11.	Nathan Hilliard,	Hill
	Feb.	13.	C. H. Munn,	Orford
	Feb.	17.	E. C. & W. L. Hopkins,	Greenfield
	Feb.	17.	F. E. Russell,	Greenfield
	Feb.	17.	Thomas Hill, manager,	St. Paul's School
	Feb.	18.	William Wallace,	Walpole
	Feb.	18.	William H. Putnam,	Hudson

1904.	Feb. 23.	George H. Bailey,	Hinsdale
	Feb. 23.	H. D. Waterman,	Monument
	Feb. 24.	Arthur H. Hayes,	Dover
	Feb. 24.	Woodbury Corey,	Gilsum
	Feb. 25.	Emil Erikson,	Candia
	Feb. 25.	S. A. Jenness,	Wolfeboro
	Feb. 25.	Clark F. Foss,	Rochester
	Feb. 26.	Thomas Jackson,	Mason
	Feb. 27.	C. C. Damren,	West Hampstead
	Feb. 29.	Nelson B. Hackett,	Londonderry
	Feb. 29.	Matti Lampi,	Smithville
	Mar. 1.	John Hazen,	Mont Vernon
	Mar. 2.	F. H. Abbott,	West Rumney
	Mar. 3.	D. H. Goodell,	Antrim
	Mar. 4.	Eli G. Metcalf,	Monroe
	Mar. 5.	L. M. Tolles,	Hudson
	Mar. 5.	William D. Cochran,	Canobie Lake
	Mar. 6.	Asa E. Felch,	East Weare
	Mar. 9.	B. C. Keniston,	West Andover
	Mar. 10.	L. A. Trow,	Mont Vernon
	Mar. 10.	J. M. Hutchinson,	Wilton
	Mar. 12.	Charles F. Reed,	Nashua
	Mar. 15.	Edward E. Ayers,	Peterboro
	Mar. 15.	James F. Lock,	East Deering
	Mar. 17.	Lerman H. Mills,	Hopkinton
	Mar. 18.	Frank E. Avery,	Hudson
	Mar. 18.	Baker Bros.,	Henniker
	Mar. 19.	Mrs. Ellen Leary,	Portsmouth
	Mar. 19.	M. B. Wilder,	Monument
	Mar. 21.	F. A. Dodge,	Concord
	Mar. 22.	Elmer Gage,	Grasmere
	Mar. 23.	E. J. Andrews,	Rochester
	Mar. 23.	W. E. Lovering,	Manchester
	Mar. 23.	Roscoe E. Berry,	Dover
	Mar. 24.	A. J. Curtis,	Concord
	Mar. 24.	S. E. Buzzell,	W. Barrington
	Mar. 25.	Freeman H. Cross,	Monroe
	Mar. 25.	William J. Severance,	Lakeport
	Mar. 26.	L. G. Warren,	Concord
	Mar. 28.	Preston Claflin,	Lyme Center
	Mar. 29.	E. H. Russell,	Greenville
	Mar. 29.	Oliver Tenney,	Greenville
	Mar. 30.	Horace F. Paul,	Concord

1904.	Mar. 31.	George W. Chandler,	Hopkinton
	April 1.	George W. Lamper,	Alton Bay
	April 1.	Edwin S. Gowing,	Hudson
	April 1.	A. S. Clark,	Sandown
	April 4.	——— Marker,	Greenville
	April 4.	William A. Tarbox,	Piermont
	April 5.	H. E. Spalding,	Nashua
	April 5.	Albert Gester,	Hudson
	April 6.	Stanley H. Abbot,	Wilton
	April 6.	H. T. Buckman,	New Ipswich
	April 7.	George W. Rowe,	Center Strafford
	April 8.	A. H. Hayes,	Alton
	April 9.	James B. Pierce,	New Boston
	April 11.	Augustus O'Toole,	Nashua
	April 11.	Ivan D. Hanchett,	Lyme
	April 12.	Mrs. Frank Gilman,	East Unity
	April 13.	Alonzo F. Tuttle,	North Nottingham
	April 13.	H. H. Putnam,	Reed's Ferry
	April 13.	F. A. Gordon,	Reed's Ferry
	April 14.	George W. Chandler,	Contoocook
	April 14.	Daniel Sanborn,	East Brentwood
	April 16.	John H. Savage,	Henniker
	April 19.	L. D. Kenison,	Starrking
	April 19.	George O. Carter,	Concord
	April 19.	C. H. Jones,	Lee
	April 20.	George L. Spofford,	West Concord
	April 21.	D. H. Goodell,	Antrim
	April 22.	H. B. Langley,	Chichester
	April 22.	John Levasser,	Whitefield
	April 22.	Leslie O. Meader,	Tamworth
	April 23.	Hosea B. Clough,	Meadows
	April 23.	Aaron G. Hodsdon,	Haverhill
	April 25.	E. M. Bray,	Whitefield
	April 25.	S. W. Kelley,	Whitefield
	April 26.	M. Swain Clough,	Concord
	April 26.	A. P. Emerson,	Hampstead
	April 27.	Samuel F. Ball,	Lyme
	April 27.	Walter F. Pickering,	Wolfeboro Falls
	April 30.	G. N. Simpson,	Suncook
	April 30.	George O. Robinson,	Concord
	May 2.	Erwin E. Williams,	Cornish
	May 4.	Parker Bros.,	Henniker
	May 4.	D. E. Huntington,	Henniker

1904.	May 5.	L. A. Blake,	Pittsfield
	May 5.	B. N. Woodward,	Orford
	May 7.	J. A. Richards,	Goffstown
	May 9.	James M. Hook,	Contoocook
	May 9.	W. F. Duncklee,	Francestown
	May 9.	Henry S. Hale,	Colebrook
	May 10.	James Darbe,	Danville
	May 10.	Charles A. Newton,	East Unity
	May 11.	J. W. Newell,	Guild
	May 11.	George F. Merrill,	Hampton Falls
	May 12.	Edward G. May,	Wilton
	May 12.	——— Moore,	Wilton
	May 12.	J. J. Doyle,	Nashua
	May 12.	Daniel McQuesten,	Hudson
	May 12.	J. W. Meyette,	Enfield
	May 12.	Edward Z. Shattuck,	Nashua
	May 13.	Rufus Flanders,	New Hampton
	May 13.	Dearborn & Huckins,	Ashland
	May 14.	J. Arthur Jones,	Contoocook
	May 14.	A. P. Emerson,	Hampstead
	May 16.	W. C. Dearborn,	Belmont
	May 16.	J. A. Rogers,	Meadows
	May 17.	H. H. Holt,	Lyme
	May 19.	Isaac B. Dodge,	Amherst
	May 19.	H. E. Spalding,	Nashua
	May 19.	Charles Webster,	New Boston
	May 19.	Austin M. Banks,	Manchester
	May 20.	L. H. Guillo,	Peterboro
	May 21.	Adelaide Palmer,	Piermont
	May 21.	E. S. Underhill,	Piermont
	May 21.	L. E. Metcalf,	Greenville
	May 21.	W. W. Austin,	Warner
	May 21.	C. A. Whitton,	East Wolfeboro
	May 21.	W. E. Haywood,	Temple
	May 23.	Dennis R. Chase,	East Deering
	May 23.	M. M. George,	Bennington
	May 27.	Peter J. Bill,	Enfield
	May 28.	Zeb. Cloucher,	Danville
	May 28.	Phineas Beede,	Fremont
	May 30.	George G. Lucy,	North Conway
	May 31.	Mrs. Matilda Jackson,	Londonderry
	June 1.	Fred T. Connor,	Contoocook
	June 3.	James B. Madson,	Concord

1904.	June	3.	Zenar Dexter,	Whitefield
	June	4.	Joel Wellington,	East Rindge
	June	4.	George Harris,	Whitefield
	June	5.	George E. Rewitzer,	North Strafford
	June	5.	Idad M. Barnes,	Henniker
	June	6.	C. J. Pike,	Pike
	June	7.	S. A. Lovejoy,	Milford
	June	10.	William L. Batchelder,	Concord
	June	11.	George M. Batchelder,	Greenville
	June	11.	Perley W. Hale,	Greenville
	June	11.	W. E. Colby,	Suncook
	June	11.	Jones Bragg,	Temple
	June	13.	John M. Thompson,	West Lebanon
	June	13.	George W. Blaisdell,	East Rochester
	June	13.	C. M. Durkee,	West Lebanon
	June	13.	Luther P. Eaton,	Peterboro
	June	15.	L. L. Harris,	Hudson
	June	15.	C. W. Foster,	Hudson
	June	15.	John Wentworth,	Hudson
	June	16.	L. H. Belcher,	Francestown
	June	17.	Mrs. A. L. Churchill,	Mason
	June	22.	E. A. Scribner,	Center Strafford
	June	23.	J. E. Ray,	North Londonderry
	June	23.	Abraham McLucas,	Nashua
	June	28.	W. F. Duncklee,	Francestown
	June	28.	J. D. Whitney, agent,	West Rindge
	June	29.	E. C. Buss,	Wilton
	June	29.	J. O. Whitcomb,	Wilton P. O.
	July	7.	George H. Chase,	Potter Place
	July	9.	Bert S. Brown,	Hanover
	July	12.	J. Benton Tracy,	Acworth
	July	12.	Timothy N. Hunt,	Peterboro
	July	13.	Scott Wellington,	Walpole
	July	16.	Fred K. Taylor,	Epping
	July	16.	Mrs. Josephine Emerson,	Newt'n Junct'n
	July	16.	George H. Hart,	Keene
	July	21.	George A. Eastman,	Henniker
	July	23.	George F. Harwell,	Hudson
	July	23.	Edd Flanders,	Weare Center
	July	26.	L. W. Hutchinson,	Chichester
	Aug.	3.	William P. Ballard,	Concord
	Aug.	6.	John S. Peverly,	Canterbury
	Aug.	9.	E. A. Holt,	Hudson

1904.	Aug. 9.	Aloie Ingerson,	Meadows
	Aug. 12.	Chester P. Hunt,	Rumney
	Aug. 12.	Charles Webster,	New Boston
	Aug. 13.	E. E. Webber,	East Concord
	Aug. 13.	Abia Hutton,	Hampstead
	Aug. 17.	A. H. Hayes,	Alton
	Aug. 17.	Frank V. Osgood,	East Concord
	Aug. 18.	E. J. Dimond,	Warner
	Aug. 19.	L. C. & G. M. Farwell,	Temple
	Aug. 19.	Harry S. Bray,	Whitefield
	Aug. 22.	Frank Furness,	Lyme
	Aug. 24.	B. F. McNamee,	Amherst
	Aug. 26.	W. Davis,	New Ipswich
	Aug. 29.	J. A. Fellows,	West Manchester
	Aug. 30.	C. F. Boutwell,	Temple
	Aug. 30.	John W. Sanborn,	East Concord
	Aug. 30.	George D. May,	Wilton
	Aug. 30.	Fred Brown,	Greenville
	Aug. 31.	George Corey,	Wilmot Center
	Sept. 1.	Mrs. John E. Johnson,	Candia
	Sept. 1.	A. B. Foss,	Rochester
	Sept. 2.	Stevens & Ashmore,	Whitefield
	Sept. 2.	Henry W. Whitman,	Henniker
	Sept. 5.	James F. Weston,	Amherst
	Sept. 5.	H. W. Blanchard,	Hudson Center
	Sept. 5.	C. A. McAfee,	Hudson
	Sept. 8.	Mrs. Joseph W. Abbott,	Wolfeboro
	Sept. 10.	George O. Robinson,	East Concord
	Sept. 10.	T. T. Baker,	Lancaster
	Sept. 12.	David B. Rollins,	Pike
	Sept. 12.	Alfred P. Emerson,	Hampstead
	Sept. 15.	Mrs. Abby Griffin,	Concord
	Sept. 15.	Joseph Plummer,	Rollinsford
	Sept. 16.	F. H. Webster,	Piermont
	Sept. 17.	H. D. Waterman,	Monument
	Sept. 19.	George L. Cady,	Bennington
	Sept. 20.	J. Arthur Jones,	Contoocook
	Sept. 23.	Andy Anderson,	Bradford
	Sept. 24.	Fred A. Currier,	Hopkinton Road
	Sept. 26.	John F. Jaques,	Lancaster
	Sept. 26.	Darius W. Ham,	Wolfeboro Falls
	Sept. 26.	S. W. Glover,	Barrington
	Sept. 27.	A. F. Newell,	Whitefield

1904.	Sept. 27.	C. A. Whitcher,	Warren
	Sept. 30.	G. C. Wilkins,	Twin Mountain
	Oct. 3.	William L. Bachelder,	Concord
	Oct. 4.	C. E. Still,	Orford
	Oct. 5.	J. F. Nichols,	Riverdale
	Oct. 5.	Perley W. Hale,	Greenville
	Oct. 5.	F. H. Davidson,	Greenville
	Oct. 6.	Clarence Sanderson,	Milford
	Oct. 7.	Mrs. Gunnar Gunnarson,	Candia Village
	Oct. 10.	J. A. Richards,	Goffstown
	Oct. 11.	Arthur Chase,	Derry
	Oct. 12.	Edward W. Colburn,	Francestown
	Oct. 13.	W. S. Pillsbury,	West Derry
	Oct. 15.	F. C. Garland,	West Henniker
	Oct. 17.	H. A. Colby,	East Concord
	Oct. 17.	A. T. James,	Whitefield
	Oct. 18.	Frank A. Bryer,	Sandwich
	Oct. 19.	Freeman P. Sanborn,	Lyme Center
	Oct. 19.	John L. Murphy,	Cherry Mountain
	Oct. 20.	Arthur H. Little,	Hampstead
	Oct. 20.	Cleaves G. Ellsworth,	North Weare
	Oct. 21.	Robert Converse,	Reed's Ferry
	Oct. 21.	John L. Cole,	Concord
	Oct. 22.	Charles H. Emerson,	Scotts
	Oct. 22.	Lyman M. Robie,	Piermont
	Oct. 22.	E. S. Underhill,	Piermont
	Oct. 24.	Hugh Corrigan,	Lancaster
	Oct. 25.	C. N. Morgan,	Concord
	Oct. 25.	Charles W. Scott,	Winchester
	Oct. 25.	C. W. Durgin,	Francestown
	Oct. 25.	Charles H. Crawford,	Starrking
	Oct. 26.	S. L. Hanson,	Penacook
	Oct. 27.	E. C. Emery,	Monroe
	Oct. 28.	D. M. Pratt,	Whitefield
	Oct. 28.	N. Maria Shedd,	Hollis
	Oct. 28.	E. J. Farley,	Nashua
	Oct. 29.	Lewis F. Hale,	Rindge
	Nov. 2.	B. F. Gregg,	Contoocook
	Nov. 2.	Adelaide Palmer,	Piermont
	Nov. 3.	J. A. Clough,	Concord
	Nov. 3.	F. H. Johnson,	Lyme Center
	Nov. 3.	T. L. Thurston,	South Wolfeboro
	Nov. 7.	James Currie,	Orfordville

1904.	Nov. 7.	C. H. Farnam,	Lebanon
	Nov. 7.	Fred Ford,	Amherst
	Nov. 9.	W. R. Parks,	Warren
	Nov. 10.	E. N. Crossett,	South Acworth
	Nov. 12.	E. M. Bray,	Whitefield
	Nov. 12.	Frank A. Tarbell,	Peterboro
	Nov. 15.	Mrs. N. J. West,	Wilton
	Nov. 15.	W. B. Wason,	Atkinson
	Nov. 15.	Cummings & Spooner,	Enfield
	Nov. 15.	H. L. Streeter,	Monument
	Nov. 16.	Leroy Stillings,	Jefferson
	Nov. 16.	Jesse Watkins,	Reed's Ferry
	Nov. 17.	R. J. Frye,	West Wilton
	Nov. 18.	——— Smith,	Plaistow
	Nov. 18.	Dearborn & Huckins,	Ashland
	Nov. 19.	James C. Naglie,	Peterboro
	Nov. 20.	George W. Rowe,	Center Strafford
	Nov. 21.	S. H. & E. R. Weeks,	Greenland
	Nov. 21.	J. F. Tenney,	Antrim
	Nov. 21.	M. G. Webster,	Meredith
	Nov. 21.	L. D. Blood,	Nashua
	Nov. 22.	George A. Plummer,	West Derry
	Nov. 22.	Ernest E. Howe,	Twin Mountain
	Nov. 22.	O. D. Fessenden,	Brookline
	Nov. 22.	J. J. Hobart,	Brookline
	Nov. 22.	Melvin A. Gray,	Colebrook
	Nov. 23.	Levi S. Connor,	Contoocook
	Nov. 25.	George R. Hartshorn,	Milford
	Nov. 25.	E. S. Richardson,	Contoocook
	Nov. 26.	Peter Villeneuve,	Manchester
	Nov. 28.	H. H. Holt,	Lyme
	Nov. 29.	Emil Erickson,	Candia
	Nov. 29.	E. Kendall Westgate,	Piermont
	Nov. 30.	W. P. Curtis,	East Concord
	Dec. 1.	Joseph Archibald,	Riverdale
	Dec. 2.	Frank C. Foster,	Newport
	Dec. 5.	Eugene C. Hubbard,	Amherst
	Dec. 5.	W. P. Ballard,	Concord
	Dec. 6.	J. E. Hills,	Hollis
	Dec. 6.	Joseph E. Mayor,	Hollis
	Dec. 6.	J. G. Tallant,	Pembroke
	Dec. 10.	John Moulton,	Manchester
	Dec. 10.	D. F. Emerson,	Candia Depot

1904.	Dec. 10.	Felix Boivin,	Rochester
	Dec. 10.	John Alickola,	New Ipswich
	Dec. 10.	Parks Lumber Co.,	Warren
	Dec. 10.	A. Person,	Candia
	Dec. 12.	A. A. Ramsey,	Antrim
	Dec. 12.	Isac N. Center,	Hudson
	Dec. 12.	William W. Goodale,	Amherst
	Dec. 13.	Nathaniel Martin,	Concord
	Dec. 13.	Walter A. Foss,	Milford
	Dec. 13.	Rufus E. Flanders,	Pike
	Dec. 14.	E. E. Hurd,	Lempster
	Dec. 15.	C. H. Crawford,	Starrking
	Dec. 15.	Fritz E. Kallenburg,	South Deerfield
	Dec. 16.	B. F. Adams,	Waterloo
	Dec. 17.	M. A. Dennis,	Orford

FINANCIAL STATEMENT, 1904.

COMPENSATION FOR ANIMALS DESTROYED.

348 tuberculous cattle (one-half health value)	\$6,606.25
21 glandered horses (diseased value)	105.00

Total paid for animals destroyed . . \$6,711.25

SERVICES AND EXPENSES OF VETERINARY SURGEONS.*

	Services.	Expenses.	Total.
Robert J. MacGuire, Concord	\$560.00	\$289.93	\$849.93
W. T. Russell, Nashua .	274.00	154.90	428.90
G. E. Chesley, Rochester .	96.00	22.63	118.63
B. M. Flint, Lyme . .	119.00	15.40	134.40
Walter B. Loring, Milford .	55.00	15.50	70.50
J. L. Rathbone, Brat'boro, Vt.	22.00	17.20	39.20
F. V. Barrett, Peterboro .	80.50	55.47	135.97
Geo. W. Copp, Melvin Village	37.00	7.36	44.36

*Expense of veterinarians include killing and burying condemned animals and railroad, hotel, and livery expenses.

	Services.	Expenses.	Total.
Geo. G. McGregor, Whitefi'ld	\$67.00	\$67.84	\$134.84
R. F. Moore, Laconia . .	5.00	3.48	8.48
G. Bickell, Haverhill, Mass. .	20.00	10.75	30.75
Lemuel Pope, Jr., Portsmouth	16.00	8.00	24.00
C. E. Burchsted, Concord .	25.00	16.00	41.00
F. L. Bodwell, Dover . .	7.00	2.00	9.00
Total	\$1,383.50	\$686.16	\$2,069.96

APPRAISERS' SERVICES AND EXPENSES.

William P. Ballard, Concord	\$449.03
H. O. Hadley, Temple	251.60
Total	\$702.63

OTHER EXPENSES.

Telephone and telegraph service, postage, stationery and printing	\$89.40
Clerical expenses	500.00
	\$589.41
Total expense for the year	\$9,473.25

An itemized exhibit of the foregoing expenditures with accompanying vouchers has been submitted to the governor and council, approved, and placed on file.

FOOT-AND-MOUTH DISEASE.

In the last report of this board we announced that foot-and-mouth disease had appeared in New Hampshire, and referred to its existence in three towns.

In order that this report may contain, in brief, a complete history of the outbreak, its continuance, and termin-

ation, we give herewith the important facts connected therewith.

Foot-and-mouth disease made its appearance in Massachusetts probably as early as June, 1902, but was not recognized as such until late in November and after it had been spread to numerous localities in that state, as well as to Vermont, Rhode Island, and Connecticut.

On November 26, 1902, Dr. Austin Peters, chief of cattle bureau of Massachusetts, wrote this board, in reply to a communication, that in his opinion the disease which was prevailing in Massachusetts was foot-and-mouth disease. About that time Dr. D. E. Salmon, chief of bureau of animal industry, sent several expert veterinarians to Massachusetts to examine the cases, when the nature of the outbreak was officially announced to be contagious foot-and-mouth disease.

Upon receipt of this official announcement the board issued the following order:

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

CONCORD N. H., November 28, 1902.

To Transportation Companies, their Agents, Stock Dealers and Owners, and others:

GENTLEMEN: By authority of "An Act to Constitute a State Board of Cattle Commissioners," approved April 7, 1891, you are hereby notified that a contagious malady known as "foot-and-mouth disease," exists in animals in Massachusetts, Rhode Island, Connecticut, and Vermont, and as the same is readily (and without restraint rapidly) communicated to cattle, sheep, goats, and other ruminant animals, and to swine, and as we are advised that the disease is spreading in certain localities in the states named, it is

Ordered, that no cattle, sheep, goats, or other ruminating animals, or swine, shall be permitted to enter the state of New Hampshire from the states of Massachusetts, Rhode Island, Connecticut, or Vermont until this order is revoked.

Any person, firm, or corporation violating this order will be prosecuted according to law.

It is expected that all local authorities, as well as every citizen interested in the welfare of the state, will co-operate in the enforcement of this order to exclude a disease which might otherwise result in an immense loss to the people of New Hampshire.

Per order of the board,

IRVING A. WATSON,

President.

N. J. BACHELDER,

Secretary.

Under same date as the above order the United States government placed an interstate quarantine upon the states of Massachusetts, Vermont, Rhode Island, and Connecticut.

On December 3 a government inspector, in tracing the infection in Methuen, Mass., found an infected herd just over the line in the town of Salem, N. H., and the board was promptly notified of the facts. On that date Dr. D. E. Salmon, chief of bureau of animal industry, recommended to Secretary Wilson that the quarantine order be extended to include the state of New Hampshire. Upon receipt of this information a representative of the board interviewed Dr. Salmon, at his headquarters in Boston, and assured him that if the proposed quarantine order could be withheld, the board would co-operate with the government in stamping out the disease in New Hampshire to the extent of assisting in the inspection of herds and in establishing rigid quarantine in whatever localities the disease

should appear. With this understanding the proposed government quarantine on the state was withheld.

To cover the situation at Salem and vicinity the following quarantine order was issued:

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

QUARANTINE ORDER.

CONCORD, N. H., December 4, 1902.

To Whom It May Concern :

By virtue of chapter 133 of the Public Statutes, notice is hereby given that "foot-and-mouth disease" exists in a herd of cattle in the town of Salem, New Hampshire; that this disease is of a very contagious nature and is spread among cattle, sheep, and swine through numerous avenues of contact with the infection, and even by visitors to infected premises; therefore, it is ordered

1. That all cattle, sheep, and swine upon infected premises shall remain in quarantine until released by official order. No cattle, sheep, or swine shall be removed from or brought upon such premises without written permission from this board. No product of the stable, including manure, hay, straw, utensils, etc., shall be removed or disposed of, excepting as directed by this board.

2. All persons, excepting those having the immediate care of the animals and such as have legal official authority, are forbidden to visit infected herds or premises, or to trespass thereon.

3. No auction or public sale of cattle, sheep, or swine shall be held in the towns of Salem or Pelham without permission from this board.

4. All persons are forbidden to drive or transport any cattle, sheep, or swine over any public highway, or to turn

the same upon any unfenced land, in the towns of Salem and Pelham, without permission from this board.

5. The owner or person in charge of any cattle, sheep, or swine in which "foot-and-mouth disease" may appear, or who has reason to believe that said animals may be infected, or in which there may be symptoms to lead him to suspect the presence of the disease, is hereby directed to notify this board immediately.

6. Pending the issuing of special instructions the provisions of these regulations will apply in any town in New Hampshire where "foot-and-mouth disease" may appear.

7. This order will be in force from its date and until revoked by this board, and any violation of the same will be prosecuted according to law.

(Signed)

IRVING A. WATSON,

President.

N. J. BACHELDER,

Secretary.

On December 5 the Salem herd, consisting of fifteen cows, was examined by a representative of this board, together with several government veterinary surgeons and an appraiser. Arrangements were made and the animals slaughtered on the following day, and the extensive work of disinfection begun.

On December 10 a herd consisting of eleven animals, in Hudson, was found to be infected with foot-and-mouth disease.

The following order was issued:

THE STATE OF NEW HAMPSHIRE.

OFFICE OF THE STATE BOARD OF CATTLE COMMISSIONERS.

SPECIAL QUARANTINE ORDER.

CONCORD, N. H., December 11, 1902.

To Whom It May Concern :

By virtue of chapter 133 of the Public Statutes, notice is hereby given that for the purpose of restricting the spread of foot-and-mouth disease the following regulations, until otherwise ordered, are in force in the town of Hudson.

1. That all cattle, sheep, and swine upon infected premises shall remain in quarantine until released by official order. No cattle, sheep, or swine shall be removed from or brought upon such premises without written permission from this board. No product of the stable, including manure, hay, straw, utensils, etc., shall be removed or disposed of, excepting as directed by this board.

2. All persons, excepting those having the immediate care of the animals and such as have legal official authority, are forbidden to visit infected herds or premises, or to trespass thereon.

3. All persons having the care of infected animals, or others living on the premises who go into the infected stables, or barns, are prohibited from visiting other stables, barns, or sheds where cattle, sheep, or swine are kept.

4. No auction or public sale of cattle, sheep, or swine shall be held in said town without permission from this board.

5. All persons are forbidden to drive or transport any cattle, sheep, or swine over any public highway, or to turn the same upon any unfenced land, in said town without permission from this board.

6. The owner or person in charge of any cattle, sheep, or swine in which foot-and-mouth disease may appear, or who has reason to believe that said animals may be infected, or in which there may be symptoms to lead him to suspect the presence of the disease, is hereby directed to notify this board immediately.

7. Pending the issuing of special instructions the provisions of these regulations will apply in any town in New Hampshire where foot-and-mouth disease may appear.

8. This order will be in force from its date and until revoked by this board, and any violation of the same will be prosecuted according to law.

(Signed)

IRVING A. WATSON,

President.

N. J. BACHELDER,

Secretary.

It may be well to mention here that the above order was promptly put in force in every town in which the disease appeared.

On December 12 a case of foot-and-mouth disease was reported from Hancock, in a stable with one other cow. The following day it was examined by a representative of this board and a government veterinary surgeon, when both animals were found to be infected. They were immediately quarantined and a day or two later were destroyed.

On December 20 another herd in the town of Hudson was reported to be infected with the malady. A representative of the board visited the herd on the following day, and found eight cows, seven of them showing symptoms of the disease. The town already being in quarantine, an order was served, as in the other instances, upon the owner of the cattle, as follows:

All persons, excepting those having the immediate care of the animals and such as have legal official authority, are

forbidden to visit infected herds or premises, or to trespass thereon.

All persons having the care of infected animals, or others living on the premises who go into the infected stables, or barns, are prohibited from visiting other stables, barns, or sheds where cattle, sheep, or swine are kept.

This herd was disposed of in the same manner as the others and the premises disinfected.

In every instance the infection has been traced to an infected herd or locality in the state of Massachusetts.

The board caused to be examined numerous other herds to which cattle from Massachusetts, particularly from infected localities, had been brought during the past two months; but no disease has been found.

At this time the disease existed in Massachusetts, Vermont, and Rhode Island.

Under date of January 13 the quarantine regulations were modified for the towns of Salem, Pelham, and Hudson to the extent of removing all restrictions on the sale, transportation or other movement of animals within the towns named. From this time until March 6 the state was supposed to be entirely free from foot-and-mouth disease, but on the latter date the board received information that a car containing eight cows, four steers, and one bull, consigned to a Brighton butcher, was shipped from Bedford to Boston on March 5, and upon arrival at its destination the inspectors found four of the cows and one steer infected with foot-and-mouth disease.

The United States authorities immediately sent three veterinary surgeons to Manchester, where they were met by a representative of the State Board of Cattle Commissioners, who accompanied them to the premises in Bedford from which the cattle were shipped. The herd, from which a portion of the cattle referred to were taken, was found to be infected.

The cattle referred to were found to have been collected as follows: From Goffstown, Antrim, Deering, Bennington, and Bedford, and from nine different herds.

On the following day the disease was discovered in a herd in Goffstown, and on this day, March 7, 1903, the United States Government placed a quarantine upon the State of New Hampshire, as follows:

(B. A. I. Order No. 103.)

QUARANTINE OF CATTLE, SHEEP, AND OTHER RUMINANTS, AND
SWINE IN THE STATE OF NEW HAMPSHIRE.

U. S. DEPARTMENT OF AGRICULTURE,

OFFICE OF THE SECRETARY,

WASHINGTON, D. C., March 7, 1903.

To the Managers and Agents of Railroads and Transportation Companies of the United States, Stockmen, and Others :

In pursuance of section 7 of the act of Congress approved May 29, 1884, entitled "An act for the establishment of a Bureau of Animal Industry, to prevent the exportation of diseased cattle, and to provide means for the suppression and extirpation of pleuro-pneumonia and other contagious diseases among domestic animals," and of the act of Congress approved June 3, 1902, making appropriations for the fiscal year ending June 30, 1903, and of the act of Congress approved February 2, 1903, entitled "An act to enable the Secretary of Agriculture to more effectually suppress and prevent the spread of contagious and infectious diseases of live stock and for other purposes," notice is hereby given that a contagious and infectious disease, known as foot-and-mouth disease, exists among animals in the State of New Hampshire, and that the cattle, sheep,

and other ruminants, and swine in said state have been exposed to the contagion of said disease: Therefore,

It is hereby ordered, That to prevent the spread of said disease from the State of New Hampshire into other states or foreign countries, and to aid in its eradication, no cattle, sheep, or other ruminants, or swine shall be moved or be permitted to move from or across said state; Provided, That said animals may be shipped from points outside of the states quarantined on account of this disease across New Hampshire for the purpose of immediate slaughter, when they are shipped in cars sealed by inspectors of the Department of Agriculture and are not unloaded while within said state; and that the seals on the cars carrying said animals shall not be broken except at their destination; and that the movement of the animals shall be so arranged that the time of their confinement in the cars shall not exceed the limit fixed by law.

It is further ordered, That all cars which have carried animals into or within the limits of said state shall be cleaned and disinfected before leaving said state: Provided, That where there are no facilities for disinfection, or when the condition of the weather prevents its proper accomplishment, such cars may be allowed to go out without disinfection if they are sealed at the time of unloading by an inspector of this department and said seal is not broken until after arrival in uninfected territory.

The cleaning and disinfection shall be done in the following manner: First, clean the car thoroughly; then the entire interior surface of the car is to be thoroughly washed with a mixture of $1\frac{1}{2}$ pounds of lime and 7 ounces of 100 per cent. carbolic acid to each gallon of water or of the same quantity of lime with 7 ounces of chloride of lime to each gallon of water. If the work is supervised by an inspector of this department, instead of using the foregoing mixtures, the disinfection may be done with a jet of steam under a pressure of not less than 50 pounds to the square

inch. The litter and manure taken from cars that have carried animals within the limits of said states shall be disinfected by mixing them with lime or saturating them with a 5 per cent. solution of 100 per cent. carbolic acid.

It is further ordered, That the hides, skins, hair, wool, horns, or hoofs of ruminants or swine shall not be allowed to be taken out of said state.

Any person, company, or corporation violating this order will be proceeded against as provided by act of Congress.

JAMES WILSON,
Secretary.

On March 12 three more infected herds were found in Goffstown. Later developments showed that the disease had been quite extensively distributed, chiefly from one herd in Goffstown.

The disease, from the beginning to the end of the outbreak, appeared in the following places, in the order named: Salem, Hancock, Hudson, Bedford, Goffstown, New Boston, Hooksett, Dunbarton, Weare, Hampstead, Manchester, and Henniker.

The duration of the disease was from about the first of December, 1903, to the 23rd day of April, 1904.

Following the apparent eradication of foot-and-mouth disease, a systematic inspection of all cattle in the southern part of the state by government veterinary surgeons. Every report of a suspicious case to this board was promptly investigated.

From time to time certain modifications of the quarantine regulations were made, but not until October 14, 1904, did the government remove all restrictions imposed by the quarantine.

SLAUGHTER OF INFECTED ANIMALS.

An appropriation of \$500,000 was made by Congress for the use of the United States Department of Agriculture in

suppressing foot-and-mouth disease in New England. The department took hold of the work with a promptness and a determination creditable in the highest degree. It was agreed to destroy not only infected animals, but all animals in an infected herd, the government to pay the owner 70 per cent. of their valuation; that the animals should be buried; the premises disinfected, and that every precaution should be taken at the expense of the government. Therefore, in all instances the herd in which the disease appeared was slaughtered at once, the carcasses either buried in quicklime, or burned; the premises, yards, out-buildings, etc., disinfected in the most thorough manner, so as to destroy all infection.

The legislature, then in session, being appealed to by owners of the animals destroyed and others, passed the following joint resolution:

Resolved, by the Senate and House of Representatives in General Court convened: That the sum of ten thousand dollars be and is hereby appropriated to reimburse the owners of farm animals killed by order of the United States Department of Agriculture and upon which they are paid seventy per cent. of their appraised value.

The governor and council are hereby authorized to draw their warrant for the balance of appraised value due said owners out of any money in the treasury not otherwise appropriated.

(Approved April 2, 1903.)

The following table shows the number and kind of animals destroyed on account of foot-and-mouth disease, the names of owners, the amount of total appraisal by the government, and the 30 per cent. paid by the State of New Hampshire under the joint resolution referred to.

STATISTICS.

REPORT OF ANIMALS SLAUGHTERED ON ACCOUNT OF FOOT-AND-MOUTH DISEASE IN THE STATE OF NEW HAMPSHIRE,
From December 6th, 1902, to April 22nd, 1903, inclusive.

TOWN.	OWNER.	Date.	Cattle.	Calves.	Sheep.	Hogs.	Chickens.	Total Apprais'l	30 p. c.
Salem	S. E. Townsend	Dec. 6	15	...	...	...	...	\$ 725.00	\$217.50
Hancock	G. S. Peavey	Dec. 15	2	...	...	...	...	70.00	21.00
Hudson	Andrews Bros.	Dec. 16	12	...	...	...	...	580.00	174.00
Hudson	S. P. Gowing	Dec. 23	8	...	...	...	...	415.00	124.50
Bedford	E. R. French	Mar. 9	15	...	...	...	...	850.00	255.00
Bedford	E. R. French	Mar. 9	...	...	...	...	7	5.25	1.57
Goffstown	J. A. Richards	Mar. 12	20	...	...	...	...	995.00	298.50
Riverdale	H. C. Wilson	Mar. 11	8	...	...	...	...	280.00	84.00
Riverdale	H. C. Wilson	Mar. 11	...	2	...	...	...	16.00	4.80
Goffstown	C. H. Hazen	Mar. 13	19	...	...	...	...	1,000.00	300.00
Hooksett	Louis Brousseau	Mar. 15	4	...	...	...	...	225.00	67.50
Goffstown	Amos W. Whipple	Mar. 15	22	...	...	...	...	1,050.00	315.00
Goffstown	Amos W. Whipple	Mar. 15	...	...	...	2	...	18.00	5.40
Goffstown	F. A. Whipple	Mar. 15	...	...	...	...	14	10.50	3.15
Goffstown	Warren H. Whipple	Mar. 15	2	...	...	...	...	90.00	27.00
Goffstown	Warren H. Whipple	Mar. 15	...	1	...	...	...	5.00	1.50
Goffstown	G. W. Kidder	Mar. 15	6	...	...	...	...	265.00	79.50
Goffstown	G. W. Kidder	Mar. 15	...	...	...	...	48	26.40	7.92
Riverdale	T. O. Knowlton	Mar. 17	31	...	...	...	...	1,108.00	332.40
Riverdale	T. O. Knowlton	Mar. 17	...	2	...	...	...	5.00	1.50
Riverdale	T. O. Knowlton	Mar. 17	...	...	55	...	...	302.00	90.60
Riverdale	T. O. Knowlton	Mar. 17	...	...	...	19	...	123.50	37.05
Dunbarton	A. E. Jones	Mar. 17	...	...	...	...	32	16.00	4.80
Bedford	F. F. Lane	Mar. 18	7	...	...	...	...	385.00	115.50
Bedford	F. F. Lane	Mar. 18	24	...	...	...	...	1,060.00	318.00
Goffstown	George Pattee	Mar. 19	...	1	6.00	1.80
Goffstown	George Pattee	Mar. 19	15	737.00	221.10

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Goffstown	George Pattee	Mar. 19	5	45.00	13.50
Goffstown	J. H. Stiles	Mar. 19	19	894.00	268.20
Goffstown	J. H. Stiles	Mar. 19	3	.....	.....	36.00	10.80
Goffstown	J. R. Bailey	Mar. 20	11	.....	.....	525.00	157.50
Goffstown	J. R. Bailey	Mar. 20	.....	1	.....	10.00	3.00
Goffstown	J. R. Bailey	Mar. 20	.....	.....	2	15.00	4.50
Goffstown	A. B. McLain	Mar. 20	11	.....	.....	225.00	225.00
Bedford	Bartlett & Butler	Mar. 20	13	.....	.....	760.00	228.00
Goffstown	A. E. Jones	Mar. 13	2	.....	.....	160.00	48.00
Goffstown	G. E. Waite	Mar. 21	17	.....	.....	805.00	241.50
Goffstown	G. E. Waite	Mar. 21	.....	14	.....	63.00	18.90
Weare	H. H. Simons	Mar. 24	18	.....	.....	645.00	193.50
Weare	H. H. Simons	Mar. 24	.....	1	.....	5.00	1.50
Goffstown	W. H. Marshall	Mar. 25	7	.....	.....	40.00	12.00
New Boston	L. Johnson	Mar. 25	1	.....	.....	205.00	61.50
Dunbarton	A. C. Barnard	Mar. 27	42	.....	.....	1,400.00	420.00
Dunbarton	A. C. Barnard	Mar. 27	.....	3	.....	13.00	4.50
Dunbarton	A. C. Barnard	Mar. 27	.....	.....	9	72.00	21.60
Bedford	T. S. Burns	Mar. 29	19	.....	.....	890.00	267.00
Bedford	T. S. Burns	Mar. 29	.....	3	.....	35.00	7.50
East Weare	Wm. N. Favor	Mar. 30	2	.....	.....	85.00	25.50
Hooksett	James Thompson	Mar. 31	23	.....	.....	985.00	298.50
Hooksett	James Thompson	Mar. 31	.....	2	.....	13.00	3.90
Hooksett	James Thompson	Mar. 31	.....	.....	2	16.00	4.80
No. Weare	R. P. Drury	Apr. 1	5	.....	.....	180.00	54.00
No. Weare	R. P. Drury	Apr. 1	.....	6	.....	80.00	24.00
No. Weare	R. P. Drury	Apr. 1	.....	.....	2	20.00	6.00
No. Weare	W. S. Bailey	Apr. 1	.....	.....	.....	380.00	114.00
No. Weare	T. F. Gilbert	Apr. 1	8	.....	.....	730.00	219.00
Bedford	Wm. F. Hammond	Apr. 2	16	.....	.....	80.00	24.00
Bedford	Wm. F. Hammond	Apr. 2	2	.....	.....	5.00	1.50
Bedford	Wm. F. Hammond	Apr. 2	.....	1	.....	12.00	3.60
Bedford	E. L. Connor	Apr. 2	.....	.....	2	150.00	45.00
Bedford	H. N. Foshier	Apr. 2	3	.....	.....	150.00	45.00
Bedford	H. N. Foshier	Apr. 2	.....	1	.....	12.00	3.60
Bedford	J. A. Richards	Apr. 2	.....	.....	.....	40.00	12.00
East Weare	H. M. Felch	Mar. 30	1	.....	.....	825.00	247.50
East Weare	H. M. Felch	Mar. 30	25	.....	.....	14.00	24.20
East Weare	H. M. Felch	Mar. 30	.....	2	.....	6.00	6.00
No. Weare	S. O. Nichols	Apr. 4	4	.....	.....	160.00	48.00

REPORT OF ANIMALS SLAUGHTERED ON ACCOUNT OF FOOT-AND-MOUTH DISEASE—Continued.

TOWN.	OWNER.	Date.	Cattle.	Calves.	Sheep.	Hogs.	Chickens.	Total Apprs'l	30 p. c.
No. Weare	S. O. Nichols	Apr. 4	3	1				\$ 2.00	\$.60
No. Weare	Mrs. J. W. Flanders	Apr. 4						125.00	37.50
No. Weare	E. B. Nichols	Apr. 4	5	1				185.00	55.50
No. Weare	E. B. Nichols	Apr. 4						10.00	3.00
No. Weare	J. G. Morse	Apr. 7	12					355.00	106.50
No. Weare	J. G. Morse	Apr. 7				1		12.00	3.60
No. Weare	H. O. Chase	Apr. 7	47	4				1,590.00	477.00
No. Weare	H. O. Chase	Apr. 7						40.00	12.00
No. Weare	H. O. Chase	Apr. 7			25			106.00	31.80
No. Weare	H. O. Chase	Apr. 7				16		145.00	43.50
No. Weare	C. H. Peaslee	Apr. 8	17					775.00	232.50
No. Weare	C. H. Peaslee	Apr. 8		6				60.00	18.00
Hampstead	A. H. Little	Apr. 10	35					1,445.00	433.50
Hampstead	A. H. Little	Apr. 10		5				12.00	3.60
Hampstead	A. H. Little	Apr. 10			2			12.00	3.60
Goffs Falls	Jas. Thompson	Apr. 11	29					1,290.00	387.00
Goffs Falls	Jas. Thompson	Apr. 11		4				40.00	12.00
Manchester	D. Jamieson	Apr. 14						340.00	102.00
Henniker	R. L. Childs	Apr. 22	6					460.00	138.00
Henniker	R. L. Childs	Apr. 22	14					17.00	5.10
Henniker	R. L. Childs	Apr. 22		4				16.00	4.80
Henniker	Edward Rice	Apr. 22	11			2		500.00	150.00
Henniker	Edward Rice	Apr. 22		2				13.00	3.90
Henniker	Edward Rice	Apr. 22				1		15.00	4.50
Henniker	Edward Rice	Apr. 22	27	4	2	2		1,084.00	325.20
Henniker	Estate of H. Morrill	Apr. 22							
			670	63	98	62	101	\$30,372.55	\$9,111.79

By virtue of a joint resolution, approved April 2, 1903, thirty per cent. of the total appraisal, as given above, is due the parties named from the State of New Hampshire.

Compiled and presented by request of His Excellency the Governor.

IRVING A. WATSON,

President of State Board of Cattle Commissioners.

May 18, 1903.

Approved:

N. J. BACHELDER,

Governor.

By direction of the Governor and Council the foregoing amounts, 30 per cent. of total appraisal, were transmitted to the parties named, by the president of the State Board of Cattle Commissioners, vouchers for which are on file with the State Treasurer.

ADMISSION OF CATTLE TO THE STATE OF NEW HAMPSHIRE.

During the period covered by this report 235 permits were issued to admit cattle to the state for pasturing purposes, the same to be returned to their respective states at the close of the pasturing season, unless tested with tuberculin and the report of results forwarded to the State Board of Cattle Commissioners, when a permit would be given to allow them to remain in the state, if the test showed them to be free from tuberculosis.

These permits cover several thousand head of cattle. In addition thereto, many permits have been issued admitting cattle to the state to remain permanently, such permits having been based in all cases upon the tuberculin test.

In no instance are cattle now admitted to the State of New Hampshire (except for immediate slaughter, or for exhibition purposes) until they have passed the tuberculin test at the hands of a competent veterinary surgeon. This regulation seems to be necessary for the protection of the purchaser, as well as the state, inasmuch as the laws and regulations of some of the adjacent states are so strict as

not to admit of the return of animals in case they should not pass the tuberculin test in this state. Therefore, the board has felt obliged to enforce this regulation to the letter.

CONCLUSIONS.

In previous reports of this board we have emphasized the importance of proper sanitary measures in preventing the development of tuberculosis, in addition to the work of destroying diseased animals.

Further experience and observation have led us to believe that the educational work that has been done, and that may be done, in showing up the nature of tuberculosis, the importance of the enforcement of sanitary measures, the evil effect of improper environment, the value of stable cleanliness, adequate ventilation, pure water, and good judgment with respect to feeding, is of far more importance in ultimate results in the reduction of this disease to a minimum (whatever that may be), than the destruction of tuberculous animals in the far advanced, or later, stage of the disease in which these cases more frequently than otherwise come to the attention of this board.

That all tuberculous animals should be destroyed when the disease is far enough advanced to be recognized by physical examination, there can be no question; but this action, in itself, is of little value in stamping out the disease, without intelligent and continued effort along the lines of prevention.

We believe that proper feeding, care, and good sanitary stabling will do more to prevent tuberculosis in cattle than any other measures — in the same manner that similar methods are the most pronounced factors in the restriction of this disease in the human family. Certainly, without attention to these essentials the disease cannot be materially, if at all, reduced.

It was asserted, when the law relating to compensation for animals destroyed on account of tuberculosis was under

consideration, that, unless an amount equal to one-half of the health value of the animal were allowed by the state, many owners of cattle would not reveal the presence of the disease in their herds, but would dispose of such animals to the best advantage they could. Our experience is entirely at variance with this idea in its general application. The fact is, most stock owners are anxious to get rid of a tuberculous animal at the earliest possible moment, so that the remainder of their herds may not become infected, the compensation being, in most cases, a secondary consideration. The very few who would take every advantage to obtain every dollar possible out of the situation, do not report their cases to the board or ask for an investigation under the present law until the animal is in the very last stages of the disease, frequently unable to get up, and occasionally found dead when the veterinary surgeon arrives. In instances of this kind the law is no protection, whatever; but the state does become a sort of insurance company for the benefit of the individual, which, we believe, was not the purport of the law.

After several years' experience in the work, we are forced to believe that the money annually appropriated for this work would result in far greater benefit to the state if the compensation for animals destroyed were reduced, and if, further, there be inaugurated a more extensive inspection service, a general campaign of education, including lectures before grange, dairymen, and agricultural meetings, the distribution of literature, and specific instructions in sanitary measures. We believe that such a course would accomplish more and cost less than the present system of operation.

Respectfully submitted,

IRVING A. WATSON,
NAHUM J. BACHELDER,
HERBERT O. HADLEY,

Board of Cattle Commissioners.

FERTILIZERS.

FERTILIZERS.

THE FERTILIZER INSPECTION IN 1903.

In accordance with the Public Statutes, the secretary of the State Board of Agriculture, Hon. N. J. Bachelder, caused to be collected and analyzed samples of all the brands of fertilizers licensed for sale in this state.

The samples were drawn by Percy A. Campbell and Harold N. Knight of the New Hampshire college, and delivered to the chemist of the Agricultural Experiment Station, Fred W. Morse, who was assisted in the analytical work by Lucian A. Hill, Harold H. Scudder, and Warren C. Hayes.

Ninety-three different brands were examined. Of these nineteen were found to be deficient in their composition; but with the exception of one brand, the deficiency in each case was limited to one constituent, and an excess was usually present in one or more of the other ingredients.

There were five deficiencies in nitrogen, six in potash, and nine in available phosphoric acid. This was slightly more in proportion to the number of brands than in the previous year.

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1903.

MANUFACTURER AND BRAND.	Nitrogen.			Phosphoric Acid.						Potash.			
	Inorganic.*	Organic.*	Total.	Soluble.	Reverted.	Available.		Insoluble.	Total.		Found.	Guaranteed.	
						Found.	Guaran- teed.		Found.	Guaran- teed.			
AMERICAN AGRICULTURAL CHEMICAL CO.													
Bradley's Corn Phosphate.....	20	1.77	1.97	5.40	3.10	8.50	8.00	2.30	10.80	10.00	1.94	1.50	
Bradley's Complete Manure for Potatoes and Veg	.29	2.56	2.85	2.85	5.05	7.90	8.00	2.25	10.15	9.00	7.01	7.00	
Bradley's Complete Manure for Top Dressing...	.70	4.52	5.22	1.55	3.90	5.45	5.00	2.85	6.30	6.00	3.10	3.00	
Bradley's Complete Manure with 10 p. c. Potash.	.38	2.86	3.24	3.30	3.75	5.95	5.00	2.55	8.50	7.00	12.06	10.00	
Bradley's Eclipse Phosphate.....	1.20	1.20	1.03	5.10	3.10	8.20	8.00	2.70	10.90	10.00	1.94	3.00	
Bradley's Potato Fertilizer.....	.28	1.84	2.12	4.70	3.75	8.45	8.00	1.60	10.05	10.00	3.10	5.00	
Bradley's Potato Manure.....	.28	1.95	2.23	3.95	3.02	6.97	6.00	1.80	8.57	8.00	5.39	5.00	
Bradley's XL Superphosphate.....	.25	2.11	2.36	5.40	4.80	10.20	8.00	1.60	12.00	11.00	1.71	1.50	
Clark's Cove Bay State Fertilizer G. G.....	.46	1.70	2.16	5.40	3.55	8.95	8.00	2.10	11.05	10.00	1.71	2.00	
Clark's Cove King Philip's Alkaline Guano.....	1.22	1.77	1.22	5.95	3.23	9.20	8.00	3.70	12.80	10.00	2.18	3.00	
Clark's Cove Potato Fertilizer.....	.42	1.77	2.19	5.60	3.05	8.65	8.00	2.15	19.80	10.00	3.15	3.00	
Cleveland Fertilizer for All Crops.....	...	1.12	1.12	5.55	3.05	8.60	8.00	2.80	11.40	10.00	2.23	2.00	
Cleveland Potato Phosphate.....	.53	1.64	2.17	6.10	2.55	8.65	8.00	1.65	10.30	10.00	3.83	3.00	
Cleveland Superphosphate.....	.24	1.93	2.17	3.40	4.90	8.30	8.00	3.70	12.00	10.00	1.75	1.50	
Crocker's Corn Phosphate.....	...	2.20	2.06	4.80	4.55	9.35	8.00	2.95	12.30	10.00	1.56	1.50	
Crocker's Grass and Oats Fertilizer.....	...	...	...	6.05	5.15	11.20	11.00	1.25	12.45	12.10	2.20	2.00
Crocker's New Rival Ammoniated Superphosphate	...	1.19	1.19	6.35	5.15	11.75	8.00	2.30	14.05	10.00	2.51	2.00	
Crocker's Potato, Hop, and Tobacco.....	.42	1.67	2.09	4.95	3.30	8.20	8.00	2.25	10.50	10.00	3.48	3.00	
Crocker's Potato Special Manure.....	.19	2.91	3.10	3.40	2.70	6.90	6.00	1.75	8.65	7.00	10.58	10.00	
Cumberland Guano for All Crops.....	...	1.19	1.19	4.90	3.75	8.65	8.00	2.85	11.05	10.00	1.96	2.00	
Cumberland Potato Fertilizer.....	.81	1.10	1.91	6.30	3.15	9.45	8.00	2.75	12.20	10.00	3.48	3.00	
Cumberland Superphosphate.....	.70	1.15	2.06	5.60	3.10	8.70	8.00	2.50	11.20	10.00	1.76	1.50	
Darling's Farm Favorite.....	.63	1.3	2.16	4.35	3.75	8.10	8.00	3.55	11.65	9.00	4.29	3.00	
Darling's General Fertilizer.....	...	1.4	1.54	4.40	2.05	6.45	6.00	3.40	9.85	7.00	4.15	3.00	

Darling's New Hampshire Special.....	...	2.25	3.21	3.30	4.25	3.34	7.49	8.00	2.81	10.30	9.00	6.86	7.00
Darling's Potato Manure.....	.76	1.50	2.26	2.47	4.25	2.45	6.70	6.00	1.95	8.65	7.00	6.24	5.00
Great Eastern Garden Special.....	.93	2.27	3.20	3.30	4.30	3.95	8.55	8.00	2.40	10.95	9.00	7.46	7.00
Great Eastern General Fertilizer.....	...	.94	.94	.82	3.25	1.94	5.19	8.00	4.01	9.20	9.00	4.10	4.00
Great Eastern Grass and Oats Fertilizer.....	...	...	...	...	5.05	5.47	10.52	11.00	1.45	11.97	12.00	2.31	2.00
Great Eastern Northern Corn Special.....	.74	1.43	2.17	2.06	4.90	4.65	9.55	8.00	1.60	11.15	10.00	2.16	1.50
Great Eastern Potato Manure.....	.71	1.25	2.02	2.30	3.75	4.65	8.40	8.00	2.80	11.20	10.00	3.80	3.00
Packer's Union Animal Corn Fertilizer.....	.62	1.64	2.23	2.50	6.05	2.77	8.82	9.00	2.25	11.07	11.00	2.50	2.00
Packer's Union Gardeners' Complete Manure.....	.46	1.87	2.33	2.40	3.55	3.50	7.05	6.00	1.75	8.90	7.00	9.56	10.00
Packer's Union Potato Manure.....	.83	1.29	2.12	2.06	5.65	2.35	8.00	6.00	2.00	10.00	10.00	6.16	6.00
Packer's Union Universal Fertilizer.....	...	.96	.96	.82	4.75	2.82	7.57	8.00	2.40	9.97	10.00	4.36	4.00
Packer's Union Wheat, Oats, and Clover Fertilizer.....	...	...	...	...	5.20	5.00	10.20	11.00	1.95	12.15	12.50	2.58	2.00
Pacific Nobisque Guano.....	.55	1.51	2.06	2.06	6.60	2.30	8.90	8.00	1.90	10.80	10.00	1.73	1.50
Pacific Potato Special.....	.60	1.64	2.24	2.06	3.75	2.80	8.55	8.00	2.05	10.60	10.00	3.21	3.00
Quinnipiac Corn Manure.....	.78	1.95	1.95	2.06	3.35	2.75	8.10	8.00	5.00	13.10	10.00	1.57	1.50
Quinnipiac Climax Phosphate for All Crops.....	.75	.30	1.08	1.03	3.90	4.60	8.50	8.00	3.10	11.60	10.00	4.28	2.00
Quinnipiac Potato Phosphate.....	.91	1.14	2.05	2.06	5.85	3.35	9.20	8.00	2.20	11.40	10.00	2.84	3.00
Read's Farmers' Friend.....	.49	1.60	2.09	2.06	4.35	3.37	7.72	8.00	2.05	9.77	10.00	3.24	3.00
Read's Potato Manure.....	.38	2.04	2.42	2.07	4.70	3.50	7.20	6.00	1.90	9.10	7.00	9.94	10.00
Read's Practical Potato Special.....	...	.83	.83	.82	1.75	2.80	4.55	4.00	2.35	6.90	5.00	9.38	8.00
Read's Standard Superphosphate.....	...	1.08	1.08	.82	3.40	4.70	8.10	8.00	4.00	12.10	10.00	4.11	4.00
Read's Vegetable and Vine Fertilizer.....	...	2.20	2.20	2.06	5.45	4.20	9.65	8.00	2.40	12.05	10.00	6.76	6.00
Soluble Pacific Guano.....	.73	1.32	2.05	2.06	6.50	2.30	8.80	8.00	1.90	10.70	10.00	1.69	1.50
Williams & Clark's American Corn Phosphate.....	.63	1.49	2.12	2.06	4.50	4.15	8.65	8.00	3.35	12.00	10.00	1.63	1.50
Williams & Clark's American Potato Manure.....	...	2.12	2.12	2.06	5.45	2.58	8.03	8.00	2.67	10.70	10.00	3.53	3.00
Williams & Clark's Frolinc Crop Producer.....	...	1.02	1.02	.82	3.05	4.00	7.95	7.00	3.55	10.06	8.00	1.07	1.00
BOWKER FERTILIZER CO.													
Bowker's Corn Phosphate.....	...	1.74	1.74	1.00	5.40	3.00	8.40	8.00	2.20	10.60	10.00	2.47	2.00
Bowker's Farm and Garden Phosphate.....	...	1.57	1.57	1.50	4.70	3.85	8.55	8.00	2.45	11.00	10.00	2.32	2.00
Bowker's Hill and Drill Phosphate.....	.74	1.56	2.30	2.25	6.60	2.90	9.50	8.00	1.50	11.00	11.00	1.97	2.00
Bowker's Potato and Vegetable Fertilizer.....	...	1.67	1.67	1.50	6.70	2.37	9.07	10.00	1.95	11.02	11.00	2.23	2.00
Bowker's Potato and Vegetable Phosphate.....	...	1.64	1.64	1.50	3.95	4.01	7.45	9.00	2.70	10.65	11.00	2.31	2.00
Bowker's Sure Crop Phosphate.....	...	1.02	1.02	.83	4.80	3.20	8.00	9.00	3.10	11.10	11.00	2.79	2.00
Stockbridge Corn Manure.....	.79	2.35	3.14	3.00	3.50	3.48	6.98	7.00	2.20	9.18	8.00	7.49	7.00
Stockbridge Potato Manure.....	.91	2.26	3.17	2.00	4.40	2.05	6.45	6.00	1.90	8.35	7.00	9.75	10.00
E. FRANK COE CO.													
E. Frank Coe's High Grade Diss. Bone & Potash.....	8.85	2.60	11.45	10.50	2.65	14.10	12.50	1.86	2.00

FERTILIZERS.

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New England Potato Fertilizer.....	1.87	1.87	1.64	5.00	7.30	7.00	1.50	8.80	8.00	3.82	4.00
OHIO FARMERS' FERTILIZER CO.											
Corn, Oats, and Wheat, Fish Guano.....	.38	.97	1.35	5.40	3.35	8.75	2.50	11.25	10.00	2.92	2.00
General Crop Fish Guano.....	...	.85	.82	1.25	5.90	7.15	2.75	9.90	8.00	1.84	1.00
Potato and Tobacco Special.....	.21	1.67	1.88	4.95	4.50	9.45	2.15	11.60	10.00	4.52	4.00
PARMENTER & POLSEY FERTILIZER CO.											
P. and P. Potato.....	...	1.71	1.60	2.25	4.80	7.05	2.20	9.25	7.00	6.31	6.00
Plymouth Rock Brand.....	.08	2.62	2.70	4.70	4.80	9.50	1.85	11.35	9.00	5.80	4.00
Special Potato Fertilizer.....	.67	2.67	3.34	5.45	3.10	8.55	.55	9.10	9.00	7.95	7.00
Star Brand Superphosphate.....	...	1.68	1.68	3.30	4.30	7.60	2.50	10.10	8.00	3.48	2.50
RUSSIA CEMENT CO.											
Essex A1 Superphosphate.....	...	1.01	1.00	2.30	2.69	4.99	6.26	11.25	9.00	2.08	2.00
Essex Complete Manure for Corn, Grain, Grass.....	.46	2.67	3.13	4.40	3.00	7.40	4.15	11.55	9.50	10.37	9.50
Essex Complete Manure for Potatoes, Roots, Veg.....	.70	3.00	3.70	4.40	4.35	8.75	7.00	12.30	9.00	8.19	8.50
Essex Corn Fertilizer.....	...	2.19	2.00	2.85	5.29	8.14	5.51	13.65	11.00	3.41	3.00
Essex Market Garden and Potato Manure.....	.65	1.64	2.29	3.95	4.20	8.15	3.55	11.70	10.00	5.96	5.00
Essex XXX Fish and Potash.....	.07	2.34	2.41	2.65	6.40	9.05	4.45	13.50	12.00	2.70	2.50
ABBOTT & MARTIN RENDERING CO.											
Abbott's Tobacco and Potato Special.....	.72	.58	1.28	4.40	4.10	8.50	2.90	11.40	10.00	5.09	4.00
Harvest King .....	...	1.14	1.20	4.70	4.20	8.90	2.90	11.80	10.00	3.32	2.00

*Inorganic nitrogen is contained only in nitrates and ammonia salts, i. e., nitrate of soda and sulphate of ammonia. It is the immediate available nitrogen. Organic nitrogen is the nitrogen contained in animal and vegetable matter, and is available in proportion to the rapidity of decay of the substances containing it.

ANALYSES OF WOOD ASHES AND CHEMICALS.

WOOD ASHES — FOUR SAMPLES.

LOCALITY.	Moisture.	Soluble potash.	Total phos- phoric acid.	Lime.
Peterborough	15.00	3.78	1.34	.....
Pittsfield	21.00	5.65	1.42	.....
Lancaster .....	.....	3.20	1.59	26.46
Dover	23.75	3.48	2.90	.....

NITRATE OF SODA — TWO SAMPLES.

From Laconia, 15.93 per cent. nitrogen.

From College Farm, 15.60 per cent. nitrogen.

SUPERPHOSPHATES — TWO SAMPLES.

Dissolved boneblack from Littleton.

Plain superphosphate from Laconia.

	Dissolved Boneblack.	Plain Superphosphate.
Soluble phosphoric acid,	15.90	9.35
Reverted phosphoric acid,	1.25	4.15
Available phosphoric acid,	17.15	13.50
Insoluble phosphoric acid,	1.85	3.20
Total phosphoric acid,	19.00	16.70

But one of the lots of wood ashes could be considered really good, on account of the comparatively low soluble potash. The nitrate of soda and superphosphates were of standard quality.

FRED W. MORSE, Chemist.

TRADE VALUES OF FERTILIZING INGREDIENTS IN RAW MATERIALS AND
CHEMICALS, 1903.

	Cents per pound.
Nitrogen in ammonia salts	17.5
“ nitrates	15.
“ dry and fine ground fish, meat, and blood, and in high grade mixed fertilizers	17.0
“ fine ground bone and tankage	16.5
“ medium ground bone and tank- age	12.0
Phosphoric acid soluble in water	4.5
“ “ “ ammonia citrate (reverted)	4.0
“ “ in fine ground bone, fish, and tankage	4.
“ “ in coarse bone and tankage	3.
“ “ in cotton-seed meal, castor- pomace, and wood ashes	4.
“ “ insoluble in mixed fertilizers	2.
Potash as sulphate free from chlorides and in wood ashes	5.
Potash as muriate	4.25

The above values are based on the wholesale market price for the materials, when sold in large lots at the principal trade centers in New England. The valuation of a ton of any mixed fertilizer based on the above figures will usually fall ten dollars below the retail price at the local agency. This variation includes such fixed charges as cost of mixing, bags, cartage, and freight, salaries and commissions of agents, and interest.

Nitrogen in the best animal fertilizers and in nitrates cost more in 1903 than in the previous year, while phosphoric acid was cheaper.

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1904.

	Nitrogen.			Phosphoric Acid.					Potash.		
	Inorganic.	Organic.	Total.	Soluble.	Reverted.	Available.		Insoluble.	Total.		
						Found.	Guaran- teed.		Found.	Guaran- teed.	
AMERICAN AGRICULTURAL CHEMICAL CO.											
Bradley's Complete Manure for Top Dressing...	4.26	.49	4.75	1.90	4.06	5.96	5.0	1.34	7.03	6.0	2.5
Bradley's Complete Manure for Potatoes & Veg.	1.70	1.84	3.54	3.95	4.57	8.52	8.0	1.38	9.90	9.0	7.91
Bradley's Complete Manure with 10 p. c. Potash.	1.35	2.03	3.38	3.80	4.34	8.14	6.0	1.99	10.13	7.0	10.66
Bradley's Corn Phosphate.....	.51	1.47	1.98	2.06	4.00	10.40	8.0	1.73	12.13	10.0	1.75
Bradley's Eclipse Phosphate.....	..	1.14	1.14	1.03	5.77	3.69	8.0	2.39	11.85	10.0	1.5
Bradley's Niagara Superphos hate.....	.89	.89	.89	5.93	3.04	8.97	8.0	1.13	10.10	9.0	2.08
Bradley's Potato Fertilizer.....	.82	1.41	2.23	6.67	2.88	9.55	8.0	2.15	11.70	10.0	1.51
Bradley's Potato Manure.....	.59	1.94	2.53	5.69	2.69	8.38	6.0	2.41	10.79	8.0	3.28
Bradley's Seeding Down Manure.....	.89	1.71	2.60	5.98	4.39	10.37	9.0	1.93	12.30	11.0	6.89
Bradley's XL Superphosphate.....	.65	1.69	2.34	2.50	6.64	3.14	9.78	2.39	12.17	11.0	2.09
Clark's Cove Bay State Fertilizer G. G.....	.78	1.34	2.12	2.06	4.03	8.63	8.0	1.60	10.23	10.0	2.10
Clark's Cove Potato Fertilizer.....	.42	1.68	2.10	2.06	4.03	8.63	8.0	1.60	10.23	10.0	1.99
Clark's Cove Potato Manure.....	.85	1.47	2.32	2.50	6.03	3.29	9.32	2.51	11.83	10.0	1.5
Cleveland Fertilizer for All Crops.....	..	1.23	1.23	4.65	2.93	7.58	6.0	1.25	8.83	8.0	3.37
Cleveland Potato Phosphate.....	.65	1.32	1.97	5.35	3.92	9.27	8.0	1.36	10.63	10.0	5.32
Cleveland Superphosphate.....	..	1.85	1.85	6.39	2.78	9.17	8.0	2.48	11.65	10.0	2.27
Crocker's Ammoniated Corn Phosphate.....	.72	1.85	2.06	5.82	2.68	8.50	8.0	1.51	10.01	10.0	3.39
Crocker's Grass and Oats Fertilizer.....	..	1.68	2.40	5.40	5.32	10.72	8.0	1.11	11.83	10.0	3.05
Crocker's New Rival Ammoniated Superphosph'e	..	..	..	7.43	4.09	11.52	11.0	1.81	13.33	12.0	1.78
Crocker's Potato, Hop and Tobacco.....	.67	1.11	1.11	6.13	3.07	9.20	8.0	1.36	10.56	10.0	2.46
Crocker's Potato Special.....	1.32	1.47	2.14	7.15	2.43	9.58	8.0	1.97	11.55	10.0	2.11
Cumberland Guano for All Crops.....	..	1.53	2.85	4.50	3.59	8.09	6.0	1.91	10.00	7.0	3.24
Cumberland Potato Fertilizer.....	.51	1.23	1.23	6.29	2.77	9.06	8.0	2.23	11.29	10.0	7.88
Cumberland Superphos hate.....	.75	1.45	1.96	5.20	4.02	9.22	8.0	2.53	11.73	10.0	3.39
Cumberland Superphos hate.....	.75	1.33	2.08	7.25	1.32	8.57	8.0	1.86	10.43	10.0	3.38
Darling's Blood, Bone and Potash.....	1.52	2.52	4.04	3.90	4.13	8.03	7.0	1.80	9.83	8.0	7.14

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Darling's Farm Favorite.....	1.70	1.92	2.06	5.83	2.73	8.55	8.0	1.89	10.45	9.0	3.70	3.0
Darling's General Fertilizer.....	1.51	1.51	1.25	6.09	3.36	9.45	6.0	2.35	11.80	7.0	3.22	3.0
Darling's N. H. Special.....	1.88	1.34	3.22	3.45	2.91	8.44	8.0	1.39	9.83	9.0	7.12	5.0
Darling's Potato Manure.....	.73	1.88	2.61	4.58	2.91	7.49	6.0	2.71	10.20	8.0	6.38	5.0
Fine Ground Bone.....	..	2.53	2.47	..	..	..	..	..	22.50	22.0	..	..
Great Eastern Garden Special.....	1.05	2.06	3.11	5.00	4.66	9.66	8.0	1.54	11.20	9.0	7.14	7.0
Great Eastern General Fertilizer.....	1.23	1.23	.82	5.80	3.66	9.48	8.0	1.24	10.72	10.0	4.87	4.0
Great Eastern Grass and Oats Fertilizer.....	..	..	..	6.75	2.96	9.71	11.0	2.29	12.00	12.0	2.41	2.0
Great Eastern Northern Corn Special.....	.70	1.52	2.22	4.10	5.22	9.32	8.0	2.53	11.85	10.0	1.85	1.5
Great Eastern Potato Manure.....	.64	1.47	2.11	6.65	2.95	9.60	8.0	1.80	11.40	10.0	3.37	3.0
High Grade Fertilizer with 10 p. c. Potash.....	.86	1.64	2.50	3.68	3.24	6.92	8.0	1.38	8.30	7.0	10.30	10.0
Nitrate of Soda.....	..	15.30	1.58	..	..	..	..	..	..	..	..	..
Packer's Union Animal Corn Fertilizer.....	.68	1.96	2.64	7.20	1.98	9.18	9.0	3.29	12.47	11.0	2.45	2.0
Packer's Union Gardeners' Complete Manure.....	1.83	1.50	3.33	4.14	3.05	7.19	6.0	1.86	9.05	7.0	7.75	10.0
Packer's Union Potato Manure.....	.73	1.19	1.92	7.58	2.19	9.77	8.0	2.13	11.90	10.0	5.76	6.0
Packer's Union Universal Fertilizer.....	..	1.10	1.10	4.51	4.07	8.58	8.0	2.15	10.73	10.0	4.77	4.0
Packer's Union Wheat, Oats, and Clover Fert.....	..	..	..	6.60	4.40	11.00	11.0	1.98	12.98	12.5	2.37	2.0
Pacific Nobisque Guano.....	..	1.32	1.32	4.80	3.59	8.39	8.0	2.01	10.40	10.0	2.33	2.0
Pacific Potato Special.....	.53	1.60	2.13	5.50	3.34	8.84	8.0	2.13	10.97	10.0	3.17	3.0
Quinnipiac Climax Phosphate for All Crops.....	..	1.16	1.16	6.28	3.15	9.43	8.0	1.29	10.72	10.0	2.20	2.0
Quinnipiac Corn Manure.....	.68	1.69	2.37	4.73	4.82	9.35	8.0	1.62	11.84	10.0	2.14	1.5
Quinnipiac Diss. Bone and Potash.....	..	..	..	7.29	3.16	10.45	10.0	1.62	12.07	11.0	2.36	2.0
Quinnipiac Potato Phosphate.....	..	2.04	2.04	6.27	2.97	9.24	8.0	2.05	11.29	10.0	3.39	3.0
Read's Farmers' Friend.....	.48	1.57	2.05	6.14	2.72	8.86	8.0	2.54	11.40	10.0	3.31	3.0
Read's Potato Manure.....	1.97	1.39	2.46	3.83	3.02	8.85	6.0	2.00	8.85	7.0	8.15	10.0
Read's Practical Potato Special.....	..	1.29	1.29	2.91	2.73	5.64	4.0	1.34	6.98	5.0	6.43	6.0
Read's Standard Superphosphate.....	..	.88	.88	6.58	2.74	9.32	8.0	1.91	11.23	10.0	4.04	4.0
Read's Vegetable and Vine Fertilizer.....	.97	1.01	1.98	5.05	2.49	7.54	8.0	2.01	9.55	10.0	6.86	6.0
Soluble Pacific Guano.....	.84	1.19	2.03	5.17	3.45	8.92	8.0	1.48	10.40	10.0	1.88	11.5
Williams & Clark's Americus Ammo. Bone Su.....	.84	1.70	2.54	5.40	4.07	9.47	9.0	2.13	11.60	11.0	2.28	2.0
Williams & Clark's Americus Corn Phosphate.....	.90	1.65	2.55	5.63	3.84	9.47	8.0	2.63	12.10	10.0	2.06	1.5
Williams & Clark's Americus Potato Manure.....	.45	1.57	2.02	7.42	2.28	9.70	8.0	2.04	11.74	10.0	3.19	3.0
Williams & Clark's Prolific Crop Producer.....	.46	1.15	1.31	6.19	4.10	10.29	7.0	1.80	12.09	8.0	2.45	1.0
BOWKER FERTILIZER CO.												
Bowker's Market Bone.....	..	2.00	1.5	..	..	..	..	..	23.53	26.0	..	..
Bowker's Corn Phosphate.....	.40	1.13	1.65	4.30	5.30	9.60	8.0	2.55	12.15	9.0	2.45	3.0
Bowker's Early Potato Manure.....	1.51	1.77	3.28	4.15	3.14	7.24	7.0	2.24	9.53	8.0	7.06	7.0
Bowker's Farm and Garden Phosphate.....	.51	1.22	1.50	5.18	3.41	8.59	8.0	1.75	10.34	10.0	2.20	2.0

LISTER'S A. C. WORKS.

Lister's Bone and Potash.....	71	.89	1.60	.....	7.10	2.96	10.06	10.0	2.19	12.25	11.0	2.29	2.0
Lister's High Grade Special.....	.....	.91	.91	.82	4.96	3.25	8.21	8.0	2.47	10.68	10.0	10.62	10.0
Lister's Oneida Special.....	.....	1.24	1.77	3.01	5.67	2.64	8.31	7.0	1.18	9.49	9.0	1.49	1.0
Lister's Potato Manure.....	.....	46	1.38	1.84	6.45	3.54	9.99	8.0	2.29	12.28	9.0	7.65	7.0
Lister's Special Corn Fertilizer.....	.....	.43	1.43	1.65	6.13	3.60	9.73	8.0	1.95	11.68	9.0	3.71	3.0
Lister's Special Potato Fertilizer.....	.....	.....	1.86	1.85	6.40	3.47	10.27	8.0	1.98	12.25	9.0	2.97	3.0
Lister's Success Fertilizer.....	.....	.....	1.36	1.24	5.52	4.10	9.62	9.0	2.33	11.95	11.0	2.69	2.0

E. MORTIMER & CO.

Peruvian Guano	1.35	.80	2.15	2.25	10.50	10.50	9.5	8.55	19.05	21.0	2.92	2.4
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LOWELL FERTILIZER CO.

Dollar Brand Phosphate.....	1.00	1.00	.82	5.25	2.74	7.99	8.0	.66	8.65	1.37	1.0
Empress Brand .....	.....	1.43	1.43	1.23	6.28	1.59	7.87	7.0	.18	8.05	8.0	2.14	2.0
Swift's Lowell Animal Brand.....	.....	2.67	2.60	2.46	6.29	3.31	9.60	9.0	1.48	11.08	10.0	4.04	4.6
Swift's Lowell Bone Fertilizer.....	.....	1.74	1.74	1.64	5.50	4.20	9.70	8.0	1.60	11.30	9.0	3.09	3.0
Swift's Lowell Ground Bone.....	.....	.....	2.22	2.47	.....	.....	.....	.....	.....	26.70	25.0	.....	.....
Swift's Lowell Market Garden Manure.....	.....	1.45	3.54	4.18	6.28	1.76	8.04	7.0	.66	8.70	8.0	5.36	6.0
Swift's Lowell Potato Manure.....	.....	1.84	1.84	1.64	5.22	2.47	7.69	7.0	.60	8.29	8.0	4.11	4.0
Swift's Lowell Potato Phosphate.....	.....	1.12	2.54	2.66	5.80	2.62	8.42	8.0	1.03	9.45	9.0	6.82	6.0
Twenty-five Dollar Phosphate.....	.....	1.77	1.77	1.65	5.08	2.61	7.69	7.0	1.14	8.93	.....	1.20	1.0

NEW ENGLAND FERTILIZER CO.

New England Corn Phosphate.....	.....	1.63	1.63	1.64	4.90	3.57	8.47	8.0	1.11	9.58	9.0	4.61	3.0
New England Potato Fertilizer.....	.....	1.14	1.14	1.64	4.23	2.18	6.41	7.0	.66	7.07	8.0	1.93	4.0
New England Superphosphate.....	.....	2.80	2.80	.....	5.23	4.61	9.84	.....	1.61	11.45	.....	3.83	.....

OHIO FARMERS' FERTILIZER CO.

Ammoniated Bone and Potash.....	.....	.83	.83	.82	4.20	4.27	8.47	8.0	2.76	11.23	10.0	3.66	4.0
Corn, Oats, and Fish.....	.19	.77	.96	1.24	2.62	6.35	8.97	8.0	2.31	11.58	10.0	2.03	2.0
General Crop Fish Guano.....	.....	.53	.53	.82	1.39	7.81	9.20	7.0	2.85	12.05	8.0	1.05	1.0

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1904.—Continued.

MANUFACTURER AND BRAND.	Nitrogen.			Phosphoric Acid.					Potash.				
	Inorganic.	Total.		Reverted.	Available.		Insoluble.	Found.	Guaran- teed.	Found.	Guaranteed.		
		Organic.	Found.		Guaran- teed.								
PARMENTER & POLSEY FERTILIZER CO.													
"A. A." Brand.....	1.45	2.02	3.47	4.50	3.55	3.95	7.50	7.0	2.10	9.60	8.0	8.61	8.0
Grain Grower Brand.....	.....	.72	.72	.82	2.83	4.94	7.77	7.0	4.28	12.00	8.0	2.52	2.0
Plymouth Rock Brand.....	.....	2.42	2.42	2.47	5.23	2.46	7.69	8.0	3.00	10.69	9.0	4.59	4.0
"P. & P." Potato Brand.....	.....	1.69	1.69	1.64	2.28	4.02	6.30	8.0	3.38	9.68	7.0	6.55	6.0
Special Potato Brand.....	.65	2.38	3.03	3.29	3.75	4.85	8.60	8.0	1.33	9.93	9.0	7.92	7.0
Star Brand.....	....	1.38	1.38	1.64	1.05	7.27	8.32	7.0	2.43	10.75	8.0	2.79	2.5
RUSSIA CEMENT CO.													
Essex A1 Superphosphate.....	....	1.23	1.23	1.00	1.75	6.43	8.18	7.0	3.95	12.13	9.0	1.46	2.0
Essex Corn Fertilizer.....	.57	1.96	2.53	2.00	3.94	5.50	9.44	9.0	3.38	12.82	11.0	3.77	3.0
Essex Complete Manure for Corn, Grain, Grass.....	.96	2.24	3.20	3.30	4.93	3.29	8.22	7.0	2.18	10.40	9.5	9.88	9.50
Essex Complete Manure for Potatoes, Roots, Veg.....	.87	2.77	3.64	3.70	6.20	3.96	10.16	7.0	2.52	12.68	9.0	8.52	8.50
Essex Market Garden and Potato Manure.....	.59	1.78	2.37	2.00	6.05	3.34	9.39	8.0	2.58	11.97	10.0	5.10	5.00
Essex XXX Fish and Potash.....	.54	2.02	2.56	2.00	2.95	5.93	8.88	9.0	2.61	11.49	12.0	3.00	2.25
BALTIMORE PULVERIZING CO.													
Farmers' Favorite Fertilizer.....	....	.73	.73	.82	1.73	5.22	6.95	5.5	.85	7.80	.....	2.88	1.50
Special Potato Mixture.....	.52	.77	1.29	1.65	2.35	3.20	5.55	5.5	.65	6.20	.....	5.16	4.00

STATE OF NEW HAMPSHIRE.

CHAPTER 43, SESSION LAWS OF 1901.

AN ACT TO REGULATE THE SALE OF FERTILIZERS.

SECTION 1. Every lot or parcel of commercial fertilizer or fertilizer material sold or offered or exposed for sale within this state shall be accompanied by a plainly printed statement, clearly and truly certifying the number of net pounds of fertilizer in the package, the name, brand, or trade-mark under which the fertilizer is sold, the name and address of the manufacturer or importer, the location of the factory, and a chemical analysis stating the percentage of nitrogen, of potash soluble in distilled water, of phosphoric acid in available form soluble in distilled water, and reverted, and of total phosphoric acid.

SECT. 2. Before any commercial fertilizer is sold or offered or exposed for sale, the manufacturer, importer, or party who causes it to be sold or offered for sale, within this state, shall file with the secretary of the board of agriculture a certified copy of the statement named in section 1 of this act, and shall also deposit with said secretary, at his request, a sealed glass jar or bottle containing not less than one pound of the fertilizer, accompanied by an affidavit that it is a fair average sample thereof.

SECT. 3. The manufacturer, importer, agent, or seller of any brand of commercial fertilizer or fertilizer material shall pay for each brand on or before the first day of March, annually, to the secretary of the board of agriculture, an analysis fee, as follows, namely: ten dollars for the phosphoric acid, five dollars for the nitrogen, and five dollars for the potash, contained or claimed to be in the said brand of fertilizer, but the fee for any brand shall not exceed fifteen dollars; provided, that whenever the manu-

facturer or importer shall have paid the fee herein required, any person acting as agent or seller for such manufacturer or importer shall not be required to pay the fee named in this section.

SECT. 4. No person shall sell or offer or expose for sale in this state any pulverized leather, hair, or wool waste, raw, steamed, roasted, or in any form as a fertilizer, without an explicit printed certificate of the fact conspicuously affixed to every package of such fertilizer.

SECT. 5. Any person selling or offering or exposing for sale any commercial fertilizer without the statement required by the first section of this act, or with a label stating that said fertilizer contains a larger percentage of any one or more of the constituents mentioned in said section than is contained therein or respecting the sale of which all the provisions of the foregoing sections have not been fully complied with, shall forfeit fifty dollars for the first offense and one hundred dollars for each subsequent offense.

SECT. 6. This act shall not affect parties manufacturing or importing fertilizer for their own use and not to sell in this state.

SECT. 7. The secretary of the board of agriculture shall annually cause to be analyzed at the New Hampshire College Agricultural Experiment Station one or more samples of every commercial fertilizer or fertilizer material sold or offered for sale under the provisions of this act. Said secretary shall cause a sample to be taken, not exceeding two pounds in weight, for said analysis, from any lot or package of such fertilizer or fertilizer material, which may be in the possession of any manufacturer, importer, agent, or dealer in this state; but said sample shall be drawn in the presence of the parties in interest or their representatives and taken from a parcel or a number of packages, which shall not be less than ten per cent. of the whole lot sampled, and shall be thoroughly mixed and then divided into equal samples and placed in glass vessels and carefully sealed

and a label placed on each, stating the name or brand of the fertilizer or material sampled, the name of the party from whose stock the sample was drawn, and the time and place of drawing, and said label shall also be signed by the person taking the sample and by the party or parties in interest, or their representative present at the drawing and sealing of said samples; one of said duplicate samples shall be retained by the secretary and the other by the party whose stock was sampled; and the sample retained by the secretary shall be for comparison with the certified statement named in section 1. The result of the analysis of the samples shall be published from time to time, together with such additional information as circumstances may advise, in reports or bulletins by the New Hampshire College Agricultural Experiment Station and in the biennial report of the state board of agriculture. All parties violating this act shall be prosecuted by the secretary of the board of agriculture.

SECT. 8. The amount of license fees received by said secretary by virtue of this act shall be paid by him to the treasurer of the State of New Hampshire. The treasurer of the State of New Hampshire shall pay from such amount, when duly approved, the moneys required for the expense incurred in making the inspection required by this act and enforcing the provisions thereof. Said expense shall include those incurred for laboratory expenses, chemical supplies, traveling expenses, printing, and other necessary matters.

SECT. 9. This act shall take effect July first, nineteen hundred and one, and all acts and parts of acts inconsistent with this act are hereby repealed.

INSPECTION OF FEEDING STUFFS.

COMPOSITION OF COMMON CATTLE FOODS.

	Water.	Ash.	Protein	Soluble Carbohy- drates.	Fibre.	Fat.
*Hay, red top	8.9	5.2	7.9	47.4	28.6	1.9
*Hay, Timothy	13.2	4.4	5.9	45.0	29.0	2.5
*Hay, clover	15.3	6.2	12.3	38.1	24.8	3.3
*Hay, Hungarian.....	7.7	6.0	7.5	49.0	27.7	2.1
*Oat fodder.....	8.9	6.2	7.6	45.1	29.3	2.8
*Rye fodder, in bloom.....	8.5	5.9	9.7	43.4	30.2	2.3
*Corn stover.....	40.1	3.4	3.8	31.9	19.7	1.1
†Corn silage.....	80.5	1.5	1.6	10.0	5.8	.6
*Corn, N. H. Flint.....	10.1	1.5	11.6	70.2	1.1	5.5
*Corn meal	15.0	1.4	9.2	68.7	1.9	3.8
*Oats, whole.....	11.0	3.0	11.8	59.7	9.5	5.0
†Oat feed.....	5.5	4.1	7.5	70.3	9.8	2.8
§Wheat bran, spring	10.6	6.0	16.3	53.0	9.4	4.7
§Wheat bran, winter.....	11.7	5.9	15.2	54.8	8.5	3.9
¶Wheat, middlings.....	10.3	3.3	19.0	57.7	4.6	5.1
¶Gluten feed.....	8.6	1.2	26.3	53.4	6.9	3.6
¶Gluten meal	8.8	.7	35.5	50.3	1.6	3.1
¶Linseed meal, new process ..	10.1	5.8	33.2	38.4	9.5	3.0
¶Cottonseed meal.....	6.9	7.2	45.6	25.1	5.6	9.6

* Composition of American Feeding Stuffs. Jenkins and Winton.

† Analyses made at the N. H. Expt. Sta., 1895-99.

§ Penn. Expt. Sta., Bull. 48.

¶ Compiled from Feed Inspection Reports and Comp. Am. Feeding Stuffs.

The state legislature of 1901 passed an act to regulate the sale of concentrated commercial feeding stuffs.

The points of the law of most interest to the consumers are concisely stated below.

Kinds of Feed coming within the Law. The law applies to all feeding stuffs except hays and straws; whole seeds and meals of wheat, rye, barley, oats, Indian corn, buckwheat, and broom corn; brans and middlings. The principal feeds coming under the provisions of the law are linseed meals, cottonseed meals, pea meals, cocoanut meals, gluten meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewers' grains, malt sprouts, hominy feeds, cerealine feeds, rice meals, oat feeds, corn and oat chops, ground beef or fish scraps, mixed feeds, and all other materials of similar nature.

The Brand. Each package of feeding stuff included within the law shall have affixed, conspicuously printed, the following statements:

The number of net pounds contained in the package.

The name or trade-mark under which it is sold.

The name of the manufacturer or shipper.

The place of manufacture.

The place of business of manufacturer or shipper.

The percentage of crude protein.

The percentage of crude fat.

These statements may be printed directly on the bag, or on a tag attached to the package.

Analysis. The secretary of the Board of Agriculture is required to collect and analyze each year at least one sample of each of the brands of feeding stuffs coming within the provisions of the act, and publish the results, together with related matter, from time to time.

The percentages of protein and fat are required because these two constituents are the most expensive to purchase and are least liable to be produced in sufficient amount in home-grown fodders.

Protein is made up of a number of substances which contain nitrogen as a distinguishing element. They occur in all the cells of both plant and animal organisms. In plants, protein is most abundant in the cells of new shoots, leaves, and the germs of seeds, and in animals it forms the muscles, tendons, and connective tissues, the clotted part of blood, and the curd of milk. Plant protein is the sole source of animal protein in our herbivorous animals, and is indispensable for making growth and milk, and also maintaining an animal in condition for work.

Fat, as it exists in plants, is almost always oily in consistency. It is most abundant in the seeds, where it is a source of energy to produce activity in the germ as soon as the seed begins to sprout. In the animal, fat is stored in the tissues to furnish a reserve of material for keeping the body warm and producing energy for work. Much of the fat in the food is at once used for these two purposes, and only a surplus is stored.

Besides protein and fat, cattle foods contain a group of substances called carbohydrates, of which sugar, starch, and gum are well-known types. Such carbohydrates are soluble in ordinary chemical reagents and usually readily digested by the animal. They occur in the cells in the various parts of plants, and are most abundant in seeds, tubers, and tuberous roots. They furnish the energy for plant activity and the material out of which to build the walls of new cells. Carbohydrates in foods do the same work in the animal that is done by fat, and can be transformed into fat. They are not as concentrated as fat, one pound of fat containing as much energy as two and one-fourth pounds of carbohydrates. In addition to the soluble starch, sugar, and gum, plants contain an insoluble carbohydrate cellulose, which forms the cell walls or frame of the plant. Cellulose, together with an insoluble gum, forms the fiber of plants, so expressed in all analyses of plants and foods.

From the table of common feeding stuffs it will be seen that the foods which are richest in protein are those residues of seeds or grains from which either oil or carbohydrates have been removed. For example, cottonseed meal is the meat of the cotton seed from which the oil has been extracted, and gluten feed is the remnant of the corn kernel after starch has been removed. Such foods have little fiber and a moderate proportion of soluble carbohydrates. They may or may not be richer in oil than common fodders.

The home-grown fodders, consisting of whole plants, are, as a rule, high in fiber, and low in protein and fat with a moderate proportion of soluble carbohydrates. The grains contain much more carbohydrates, with a little more protein and fat than the fodders. Corn meal and oat feed are inferior to the whole grains in composition, because the best grades of corn and oats are sold unground.

In the by-products from wheat, viz., bran and middlings, we have the portions of the grain which are richest in protein and fat, but for human foods they are made unsuitable by the larger proportion of fiber accompanying the other constituents.

Although winter bran usually sells for a higher price than spring, it will be noted that its composition is a little inferior in both protein and fat. This is borne out by numerous analyses.* Digestion experiments show practically no difference** in the rate of digestibility of the varieties, and consequently there is no reason why one should purchase winter bran in preference to spring bran.

Wheat middlings vary considerably in composition and value. In general, so far as recorded analyses can show, brown middlings have more fiber and less soluble carbohydrates than the average, while flour middlings contain more of the latter and less of the former. The protein content will average about alike for the two grades. Mixed feed is made up from both bran and middlings, and conse-

* Pa. Expt. Sta. Bull. 48. N. J. Expt. Sta. Bull. 160.

** Digestibility of American Feeding Stuffs.—Jordan and Hall.

quently has a composition varying between those of the other two.

In purchasing feeding stuffs one should carefully consider what kinds he can grow and what animal products he wishes to produce. Growing animals and milch cows require more protein in their food than fattening animals, because flesh and milk contain much protein, while fat is produced from fat and carbohydrates. If one has on hand both coarse fodder and home-grown grains, he is most concerned to get a supply of protein. If he has only coarse fodders, fat in addition to protein will be advantageous, while, as is sometimes the case, if the stock of hay is short, it may be well to buy the low priced by-products containing high percentages of soluble carbohydrates with as little fiber as possible.

In a few instances so-called oat feeds have been sold in our state which were nothing but finely ground hulls. A sample received from Littleton before the passage of the law contained but 2.6 per cent. of protein and over 26 per cent. of fiber. The branding of such materials with a guaranteed amount of protein and fat will enable purchasers to avoid them or to buy them at prices proportionate to their composition.

In accordance with the law, the secretary of the State Board of Agriculture has caused samples of all licensed brands of feeding stuffs to be collected by an agent of the board, and samples have been duly analyzed at the New Hampshire College Agricultural Experiment Station. Fifty-seven samples have thus been examined, and the results are given in the following tables:

On the whole, the results show a satisfactory condition of the trade in respect to quality, since there are but few serious deficits in the goods as guaranteed.

The prices of some of the feeding stuffs have little relation to their composition, but seem to be governed by what the market will bear. Such a condition can only be remedied by an intelligent study of the different foods.

INSPECTION STATISTICS.

COMPOSITION OF COMMERCIAL FEEDING STUFFS, 1903.

BRAND.	MANUFACTURED BY	Sampled at	Protein.		Fat.	
			Guar.	Found.	Guar.	Found.
COTTON SEED MEAL.						
Bluff Mill, Ark.	American Cotton Oil Co.	Colebrook	43.	44.87	9.	8.55
Macon, Ga.	American Cotton Oil Co.	Lisbon	43.	43.31	9.	9.17
Canary	American Cotton Oil Co.	Keene	43.	42.02	9.	10.27
Green Diamond	R. W. Biggs & Co.	Nashua	43.	48.00	9.	9.30
Green Diamond	Chapin & Co.	Claremont	43.	39.82	9.	9.76
Green Diamond	Chapin & Co.	Lakeport	43.	43.00	9.	8.77
Rome, Ga.	Georgia Cotton Oil Co.	Littleton	43.	41.19	9.	9.85
Dixie	Humphreys, Godwin & Co.	Dover	43.	44.93	9.	8.73
LINSEED MEAL.						
Cleveland Flax.	American Linseed Co.	Littleton	36.	35.50	2.	1.92
Cleveland Flax.	American Linseed Co.	Claremont	36.	39.69	2.	2.22
Cleveland Flax.	American Linseed Co.	Epping	38.	38.34	1.	2.70
New Process	American Linseed Co.	Milford	38.	39.40	1.	1.57
New Process	American Linseed Co.	Lisbon	38.	38.81	1.	2.12
Old Process	American Linseed Co.	Franklin	32.	32.21	5.	2.30
GLUTEN MEAL.						
Chicago	Glucose Sugar Refining Co.	Keene	38.	32.69	3.	2.53
Chicago	Glucose Sugar Refining Co.	Nashua	.....	35.10	.....	2.10
Cream	Chas. Pope Glucose Co.	Franklin	34.	44.93	8.2	5.58
Atlas	Not given	Epping	.....	33.34	.....	13.60

GLUTEN FEED.				
Buffalo	Glucose Sugar Refining Co.....	Dover	25.82	3.58
Buffalo	Glucose Sugar Refining Co.....	Dover	24.83	2.44
Globe	New York Glucose Co.....	Lakeport	25.27	2.40
Pekin	Not given	Nashua	27.11	1.97
MIXED FEED.				
Buckeye Wheat.....	American Cereal Co.....	Claremont	17.50	4.89
Snowflake	Lawrenceburg Roller Mills Co.....	Millford	16.90	4.68
DAIRY FEED.				
Quaker	American Cereal Co.....	Dover	13.32	3.62
H.-O.	H.-O. Co	Concord	17.50	4.49
HOMINY MEAL.				
Unknown .....	.....	Temple	11.76	9.45
Green Diamond...	Chapin & Co.....	Nashua	9.65	7.52
OAT FEED.				
Vim	American Cereal Co.....	Claremont	7.00	3.70
Royal	Great Western Cereal Co.....	Franklin	6.23	2.42
Boston	J. E. Soper & Co.....	Lebanon	6.84	1.90
CORN AND OAT FEED.				
Victor	American Cereal Co.....	Claremont	8.66	4.04
Victor	American Cereal Co.....	Nashua	9.30	3.00
Boss	Great Western Cereal Co.....	Nashua	8.16	6.26
Durham	Great Western Cereal Co.....	Franklin	8.95	4.89
Haskell's	W. H. Haskell & Co.....	Lisbon	8.27	3.64
H.-O. Horse.....	H.-O. Co	Concord	9.38	6.52
H.-O. Horse.....	H.-O. Co	Concord	11.81	4.25
H.-O. Horse.....	H.-O. Co	Portsmouth	12.	4.05
H.-O. Horse.....	H.-O. Co	Portsmouth	14.40	4.05

COMPOSITION OF COMMERCIAL FEEDING STUFFS, 1903.—Concluded.

BRAND.	MANUFACTURED BY	Sampled at	Protein.		Fat.	
			Guar.	Found.	Guar.	Found.
CORN, OAT, AND BARLEY FEED.						
Schumacher's Stock	American Cereal Co.	Portsmouth	10.7	11.58	3.3	4.50
POULTRY FOODS.						
American	American Cereal Co.	Dover	14.	13.75	4.5	6.21
American	American Cereal Co.	Laconia	.....	15.01	.....	6.30
*Poultry and Swine.	Jos. Breck & Sons.	Dover	.....	32.21	.....	10.40
H.-O.	H.-O. Co.	Keene	17.	17.94	5.5	5.44
H.-O.	H.-O. Co.	Portsmouth	17.	19.48	5.5	4.61
**Page's Per-	C. S. Page.	Littleton	25.	27.75	10.	9.39
fect	C. S. Page.	Littleton	.....	30.62	.....	4.52
MEAT AND BONE MEAL.						
Bradley's Meat...	American Agri. Chemical Co.	Dover	40.	49.00	8.	11.12
Meat and Bone	Beach Soap Co.	Keene	30.	31.50	10.	10.61
(Star)	Beach Soap Co.	Lebanon	.....	24.40	.....	7.30
Beach's Bone	Beach Soap Co.	Laconia	30.	23.96	10.	8.85
Meat and Bone.	Bowker Fertilizer Co.	Keene	30.	37.62	5.	10.74
Animal	Bowker Fertilizer Co.	Littleton	.....	31.65	.....	8.70
Animal	Bradley Fertilizer Co.	Littleton	40.	41.77	8.	7.60
Bradley's Meat						

Page's Bone	C. S. Page.....	Littleton .....	.....	24.31	.....	9.85
Beef Scraps	Eowker Fertilizer Co.....	Portsmouth .....	.....	53.97	.....	14.25
PATENTED FOODS.						
Blatchford's						
Calf Meal	J. W. Barwell.....	Keene	26	25.37	5.	4.51
Blatchford's						
Calf Meal	J. W. Barwell.....	Lebanon .....	.....	25.71	.....	4.82

* An animal meal.

** Coarse raw bone.

FRED W. MORSE,
Chemist.

COMPOSITION OF COMMERCIAL FEEDING STUFFS, 1904.

BRAND.	MANUFACTURED BY	Protein.		Fat.	
		Guar.	Found.	Guar.	Found.
COTTON SEED MEAL.					
Owl.....	F. W. Brodie & Co.....	43.	46.83	9.	7.54
Green Diamond	Chapin & Co.....	43.	36.87	9.	12.44
Magnolia	Chas. M. Cox Co.....	43.	45.34	9.	9.90
Dixie	Humphreys, Goodwin & Co.....	41.	45.44	9.	9.58
Star	Sledge & Wells Co.....	43.	40.95	9.	9.27
Soper's	J. E. Soper & Co.....	43.	44.72	9.	9.59
LINSEED MEAL.					
Cleveland	American Linseed Co.....	38.	33.82	1.	9.11
Old Process	American Linseed Co.....	32.	36.12	5.	7.63
GLUTEN MEAL.					
Cream	Chas. Pope Glucose Co.....	35.5	36.21	....	2.30
Cream	Chas. Pope Glucose Co.....	35.5	44.88	3.	1.04
GLUTEN FEED.					
Buffalo	Glucose Sugar Refining Co.....	....	26.23	....	3.11
Globe	New York Glucose Co.....	27.	26.78	3.38	2.27
Pekin	Not given .....	....	24.08	....	3.21
Queen	Not given .....	....	25.96	....	2.38
Warner's	Not given .....	....	18.88	....	2.30

Quaker	American Cereal Co. ....	.....	14.48	.....	2.87
H.-O.	H.-O.- Co.	18.	17.60	4.5	4.21
Green Diamond	Chapin & Co.	11.	8.41	8.	4.34
Wirthmore	Chas. M. Cox Co.	10.5	10.62	7.5	6.81
Hominy Feed	Miner, Hillard Milling Co.	10.	10.00	7.5	6.35
Buckeye	Not given .....	.....	21.23	.....	4.68
Vim	American Cereal Co. ....	.....	6.23	.....	2.36
Royal	Great Western Cereal Co. ....	.....	7.28	.....	1.62
David's	Not given .....	.....	7.90	.....	2.02
Victor	American Cereal Co.	9.	14.37	4.	3.21
Boss	Great Western Cereal Co. ....	.....	7.95	.....	2.93
Durham	Great Western Cereal Co. ....	.....	7.75	.....	4.68
Excelstor	Not given	8.0	10.36	4.2	6.66
De-Fi	Ellsworth & Co.	8.3	8.73	3.0	1.62
Haskell's	W. H. Haskell Co. ....	.....	8.57	.....	5.25
H.-O. Horse	H.-O.- Co.	12.	11.71	4.5	4.5
Ajax Flakes	Not given .....	.....	27.69	.....	8.82
Biles Ready Ration..	Not given .....	.....	23.62	.....	6.93

COMPOSITION OF COMMERCIAL FEEDING STUFFS, 1904.—Concluded.

BRAND.	MANUFACTURED BY	Protein.		Fat.	
		Guar.	Found.	Guar.	Found.
Blue Ribbon	Not given .....	.....	33.31	.....	14.19
Empire State	Not given .....	.....	32.60	.....	13.06
POULTRY FOOD.					
American	American Cereal Co. ....	.....	13.45	.....	6.31
Armour's	Armour Fert. Works. ....	.....	22.59	.....	0.40
H.-O.	H.-O.- Co. ....	.....	15.77	.....	4.86
Page's	C. S. Page.	17.	25.89	5.5	3.85
Pratt's	Pratt Food Co. ....	.....	14.68	.....	8.05
MEAT AND BONE MEALS.					
Bradley's Superior ..	American Agri. Chem. Co.	30.	37.17	8.	9.84
Beef Scraps	American Agri. Chem. Co.	40.	46.96	15.	14.23
Meat and Bone	Beach Soap Co.	26.	26.45	10.	8.65
Beef Scraps	Bowker Fertilizer Co.	50.	42.31	15.	14.24
Animal Meal	The Bowker Co.	30.	34.87	5.	8.33
Swift's Beef Scraps. .	Lowell Fertilizer Co. ....	.....	41.33	.....	18.20
Swift's Meat & Bone. .	Lowell Fertilizer Co. ....	.....	52.65	.....	9.76
Whitman & Pratt's. .	Not given .....	.....	39.62	.....	15.24
MISCELLANEOUS.					
Blatchford's Calf Meal	Not given .....	.....	23.31	.....	4.11
Blatchford's Sugar and Flaxseed	Not given	28.25...	26.73	11.25....	10.71

FRED W. MORSE, Chemist.

STATE OF NEW HAMPSHIRE.

CHAPTER 35, SESSION LAWS OF 1901.

AN ACT TO REGULATE THE SALE OF CONCENTRATED COMMERCIAL FEEDING STUFFS.

SECTION 1. Every manufacturer, company or person, who shall sell, offer, or expose for sale or for distribution in this state any concentrated commercial feeding-stuff used for feeding farm live-stock, shall furnish with each car or other amount shipped in bulk and shall affix to every package of such feeding-stuff, in a conspicuous place on the outside thereof, a plainly printed statement clearly and truly certifying the number of net pounds in the package sold or offered for sale, the name or trade-mark under which the article is sold, the name of the manufacturer or shipper, the place of manufacture, the place of business, and a chemical analysis stating the percentages it contains of crude protein, allowing one per centum of nitrogen to equal six and one-fourth per centum of protein, and of crude fat, both constituents to be determined by the methods prescribed by the association of official agricultural chemists. Whenever any feeding-stuff is sold at retail in bulk or in packages belonging to the purchaser, the agent or dealer, upon request of the purchaser, shall furnish to him the certified statement named in this section.

SECT. 2. The term "concentrated commercial feeding-stuffs," as used in this act, shall include linseed meals, cottonseed meals, pea meals, cocoanut meals, gluten meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewers' grains, malt sprouts, hominy feeds, cerealine feeds, rice meals, oat feeds, corn and oat chops, ground beef or fish scraps, mixed feeds, and all other materials of similar nature; but shall not include hays and straws, the

whole seeds nor the unmixed meals made directly from the entire grains of wheat, rye, barley, oats, Indian corn, buckwheat and broom corn; neither shall it include wheat, rye, and buckwheat brans or middlings, nor mixed with other substances, but sold separately, as distinct articles of commerce, nor pure grains ground together.

SECT. 3. Before any manufacturer, company, or person shall sell, offer, or expose for sale in this state any concentrated commercial feeding-stuffs, he or they shall, for each and every feeding-stuff bearing a distinguishing name or trade-mark, file annually during the month of December with the secretary of the board of agriculture a certified copy of the statement specified in the preceding section, said certified copy to be accompanied, when the secretary shall so request, by a sealed glass jar or bottle containing at least one pound of the feeding-stuff to be sold or offered for sale, and the company or person furnishing said sample shall thereupon make affidavit that said sample corresponds within reasonable limits to the feeding-stuff which it represents, in the percentage of protein and fat which it contains.

SECT 4. Each manufacturer, importer, agent, or seller of any concentrated commercial feeding-stuffs, shall pay annually during the month of December to the secretary of the board of agriculture a license fee of twenty dollars. Whenever a manufacturer, importer, agent, or seller of concentrated commercial feeding-stuffs desires at any time to sell such material and has not paid the license fee therefor in the preceding month of December, as required by this section, he shall pay the license fee prescribed herein before making any such sale. The amount of license fees received by said secretary pursuant to the provisions of this section shall be paid by him to the treasurer of the State of New Hampshire. The treasurer of the State of New Hampshire shall pay from such amount when duly approved the moneys required for the expense incurred in

making the inspection required by this act and enforcing the provisions thereof. The secretary of the board of agriculture shall report biennially to the legislature the amount received pursuant to this act, and the expense incurred for salaries, laboratory expenses, chemical supplies, traveling expenses, printing, and other necessary matters. Whenever the manufacturer, importer, or shipper of concentrated commercial feeding-stuff shall have filed the statement required by section 1 of this act and paid the license fee as prescribed in this section, no agent or seller of such manufacturer, importer, or shipper shall be required to file such statement or pay such fee.

SECT. 5. The secretary of the board of agriculture shall annually cause to be analyzed at the New Hampshire College Agricultural Experiment Station, at least one sample, to be taken in the manner hereinafter prescribed, of every concentrated commercial feeding-stuff sold or offered for sale under the provisions of this act. Said secretary shall cause a sample to be taken, not exceeding two pounds in weight, for said analysis, from any lot or package of such commercial feeding-stuff which may be in the possession of any manufacturer, importer, agent, or dealer in this state; but said sample shall be drawn in the presence of the parties in interest, or their representatives, and taken from a parcel or a number of packages, which shall not be less than ten per centum of the whole lot sampled, and shall be thoroughly mixed, and then divided into two equal samples, and placed in glass vessels and carefully sealed and a label placed on each stating the name of the party from whose stock the sample was drawn and the time and place of drawing, and said label shall also be signed by the person taking the sample, and by the party or parties in interest or their representatives at the drawing and sealing of said samples; one of said duplicate samples shall be retained by the secretary and the other by the party whose stock was sampled, and the sample or samples retained by

the secretary shall be for comparison with the certified statement named in section 3 of this act. The result of the analysis of the sample or samples so procured, together with such additional information as circumstances advise, shall be published in reports or bulletins from time to time.

SECT. 6. Any manufacturer, importer, or person who shall sell, offer, or expose for sale or for distribution in this state any concentrated commercial feeding-stuff, without complying with the requirements of this act, or any feeding and which contains substantially a smaller percentage of the constituents than are certified to be contained, shall, on conviction in a court of competent jurisdiction, be fined not more than one hundred dollars for the first offense, and not more than two hundred dollars for each subsequent offense.

SECT. 7. Any person who shall adulterate any kind of meal or ground grain, with milling or manufacturing offals, or any other substance whatever, for the purpose of sale, unless the true composition, mixture, or adulteration thereof is plainly marked or indicated upon the package containing the same or in which it is offered for sale; or any person who knowingly sells, or offers for sale, any meal or ground grain which has been so adulterated unless the true composition, mixture, or adulteration is plainly marked or indicated upon the package containing the same, or in which it is offered for sale, shall be fined not less than twenty-five or more than one hundred dollars for each offense.

SECT. 8. Whenever said secretary becomes cognizant of the violation of any of the provisions of this act he shall prosecute the party or parties thus reported; but it shall be the duty of said secretary, upon thus ascertaining any violation of this act, to forthwith notify the manufacturer, importer, or dealer in writing, and give him not less than thirty days thereafter in which to comply with the require-

ments of this article ; but there shall be no prosecution in relation to the quality of any concentrated commercial feeding-stuff if the same shall be found substantially equivalent to the certified statement named in section 3 of this article.

SECT. 9. This act shall take effect December first, nineteen hundred and one.

NEW HAMPSHIRE STATE GRANGE.

1904.

POMONA AND SUBORDINATE GRANGES.

OFFICERS.

Master, HERBERT O. HADLEY, Temple.
Overseer, GILBERT A. MARSHALL, Lancaster.
Lecturer, RICHARD PATTEE, Ashland.
Steward, WESLEY ADAMS, West Derry.
Assistant Steward, WALTER H. TRIPP, Short Falls.
Chaplain, JOHN THORPE, Center Harbor.
Treasurer, JOSEPH D. ROBERTS, Dover.
Secretary, GEORGE R. DRAKE, Manchester.
Gate Keeper, ELLERY M. FELKER, Dover.
Ceres, MRS NETTIE C. HADLEY, Temple.
Pomona, MRS FLORA J. MILES, Twin Mountain.
Flora, JOSEPHINE M. DRAKE, North Hampton.
Lady Assistant Steward, MRS ELENA B. C. SMITH Ash-
land.

EXECUTIVE COMMITTEE

Chairman, HERBERT O. HADLEY, ex-officio.
Secretary, GEORGE R. DRAKE, ex-officio.
EDWARD E. BISHOP, Littleton.
GEORGE H. YEATON, Dover.
DANIEL C. WESTGATE, Plainfield.

LIST OF DEPUTIES.

GENERAL DEPUTY.

Charles B. Hoyt, Sandwich.

SPECIAL DEPUTIES.

John A. Edgerly, Mirror Lake.

Frank P. Fisk, Milford.

Milton E. Osborn, Peterborough.

Cryus Downing, Wentworth.

POMONA DEPUTIES.

District No. 1. B. Frank Hanson, Somersworth.

District No. 2. H. Taylor Heath, Bristol.

DISTRICT DEPUTIES.

No. 1. Jay M. Goodrich, Atkinson.

No. 2. Charles F. Foss, Strafford Corner.
P. O. Rochester.

No. 3. Elihu A. Corson, East Rochester.

No. 4. George H. Colby, Pembroke. P. O. Suncook.

No. 5. Hadley B. Worthen, Bristol.

No. 6. William H. Wells, Plymouth.

No. 7. W. O. Burbeck, Haverhill. P. O. Pike.

No. 8. Elmer E. Woodbury, No. Woodstock.

No. 9. William A. Cowley, East Concord.

No. 10. Robert W. Upton, Bow Mills.

No. 11. Herbert L. Brown, Boscawen.
P. O. Canterbury Depot.

No. 12. John E. Colburn, Temple.

No. 13. Albert M. French, Gilsum.

No. 14. Ezra B. Pike, Hinsdale.

No. 15. Sanford M. Tarbell, Hancock.
P. O. East Harrisville.

No. 16. John D. Whitney, West Rindge.

No. 17. Clarence R. Russell, Brookline.

No. 18. William Melendy, Jr., Bedford.
P. O. Manchester.

- No. 19. George A. Gove, Newport.
No. 20. Nathan R. Andrews, Plainfield.
P. O. Meriden.
No. 21. Harry D. Locke, Deering.
No. 22. Sidney A. Converse, Lyme.
No. 23. Leroy J. Severance, Laconia.
P. O. Lakeport.
No. 24. Leslie F. Bean, Littleton.
No. 25. John E. Hodgdon, Ossipee.
No. 26. Everett S. Whittemore, Conway.
P. O. Intervale.
No. 27. Edgar J. Rand, Rye.
No. 28. L. R. Wentworth, Rochester.
No. 29. Charles Flanders, Brentwood.
No. 30. Frank Blodgett, Stewartstown.
No. 31. James E. McIntire, Lancaster.
No. 32. Charles C. Howe, Groveton.
No. 33. Charles J. Hadley, Manchester.

POMONA GRANGES.

16. AMMONOOSUC VALLEY, Lisbon.—Wilmer Langway, master, Lisbon; Mrs. Lizzie M. Bowles, lecturer, Sugar Hill; Mrs. Jennie C. Franklin, secretary, Woodsville. Number of members, 287.
15. ANDROSCOGGIN VALLEY, West Milan.—Judson H. Porter, master, Groveton; Mrs. Jennie M. Veasie, lecturer, Stark; Mrs. Lillian B. Cole, secretary, Crystal. Number of members, 328.
4. BELKNAP COUNTY, Laconia.—Freeman G. Smith, master, Laconia; Mrs. Kate A. Gilman, lecturer, Laconia; Winfield S. Shannon, secretary, Gilman-ton, I. W. Number of members, 709.
8. CARROLL COUNTY, Ossipee Corner.—J. E. Hodgdon, master, Ossipee, Box 2; Mrs. Mary F. Lamprey, lecturer, Mirror Lake; Mrs. Flora B. Haley, secretary, Moultonborough. Number of members, 500.
6. CHESHIRE COUNTY, Keene.—Henry W. Banks, master, Swanzey; I. A. Loveland, lecturer, Gilsum; Mrs. Ella F. Rugg, secretary, Keene, 24 Park Avenue. Number of members, 476.
2. EASTERN N. H., Rochester.—Frank R. Marston, master, Farmington; Grace M. Clements, lecturer, Dover, R. F. D.; Mrs. Hattie B. Locke, secretary, North Barrington. Number of members, 830.
7. EAST ROCKINGHAM, Exeter.—Charles H. Brackett, master, Greenland; Mrs. Mary H. Mifflin, lecturer, Exeter; William R. Weeks, secretary, Greenland. Number of members, 577.
19. GOVERNOR BACHELDER, Raymond.—James A. Healey, master, Raymond; Henry A. Hubbard, lecturer, East Candia; Andrew J. Brown, secretary, Fremont. Number of members, 59.

13. GRAFTON COUNTY, Rumney.—W. O. Burbeck, master, Pike Station; Mrs. Susie C. Atwood, lecturer, West Rumney; Mrs. Eugene Downing, secretary, Wentworth. Number of members, 356.
1. HILLSBOROUGH COUNTY, Milford.—Clarence L. Trow, master, Milford; Mrs. Emma F. Abbott, lecturer, Wilton; John T. Robertson, secretary, Bennington. Number of members, 650.
17. LAKE AND VALLEY, Bristol.—Hadley B. Worthen, master, Bristol; H. Taylor Heath, lecturer, Bristol; Mrs. Jennie N. McMurphy, secretary, Bristol. Number of members, 247.
7. MASCOMA VALLEY, Lebanon.—Don S. Bridgman, master, Hanover; Mrs. Dell G. Foster, lecturer, Enfield; Mrs. Jennie M. Bridgman, secretary, Hanover. Number of members, 400.
3. MERRIMACK COUNTY, Concord.—Curtis B. Childs, master, Henniker; Henry H. Metcalf, lecturer, Concord; Robert W. Upton, secretary, Bow Mills. Number of members, 483.
5. NORTHERN N. H., Littleton.—James E. McIntire, master, Lancaster; Mrs. Flora J. Miles, lecturer, Twin Mountain; Albert J. Richardson, secretary, Littleton. Number of members, 734.
18. PEMIGEWASSET VALLEY, Plymouth.—Mrs. Carrie E. Boyce, master, Campton Village; Mrs. Olive A. Weeks, lecturer, West Thornton; Joseph H. Morrison, secretary, Plymouth, R. F. D. Number of members, 59.
9. SULLIVAN COUNTY, Newport.—George A. Gove, master, Newport; Almon E. Clark, lecturer, East Acworth; Mrs. Etta F. Gove, secretary, Newport, Box 284. Number of members, 265.
12. SUNCOOK VALLEY, Pembroke.—Albion R. Hyde, master, Northwood Narrows; George H. Colby, lecturer, Suncook; George B. Lake, secretary, Suncook. Number of members, 326.

14. UPPER COOS, Colebrook.—Ransom Harriman, master, Colebrook; Mrs. Emma Chatman, lecturer, Colebrook; Frank Blodgett, secretary, Stewartstown. Number of members, 326.
10. WEST ROCKINGHAM, Hampstead.—William J. Kingsbury, master, West Derry; William H. Mould, lecturer, Fremont; Jay M. Goodrich, secretary, Atkinson. Number of members, 428.

SUBORDINATE GRANGES.

- 20 ADVANCE, Wilton.—Edmund M. Purdy, master; Mrs. Minnie F. Gray, lecturer; Mrs. Mary S. Flint, secretary. Number of members, 96.
55. AMMONOOSUC, Swiftwater.—Merrill Tewksbury, master; Mrs. Lucetta Pike, lecturer, Benton; Lucy Burnham, secretary. Number of members, 126.
141. AMOSKEAG, Manchester.—William P. Farmer, master, 24 Hanover St.; Mrs. Lizzie A. Brockway, lecturer, 413 Beacon St.; Mrs. Idella J. Ferguson, secretary, 478 Belmont St. Number of members, 435.
228. ANDROSCOGGIN, Milan.—Stanley Scott, master; Lena Ellingwood, lecturer; Mrs. Bertha T. Robbins, secretary. Number of members, 180.
98. ANTRIM, Antrim.—Caleb M. Hills, master; Benjamin F. Tenney, lecturer; Linda Hutchinson, secretary. Number of members, 101.
139. ARLINGTON, Winchester.—David C. Stearns, master; Delano Sabin, lecturer; Mrs. Louisa E. Scott, secretary, Box 129. Number of members, 184.
129. ASHUELOT, Gilsum.—Albert M. French, master; Mary A. Hammond, lecturer; Carrie M. Kidder, secretary. Number of members, 92.
123. ATKINSON, Atkinson.—Wheeler H. Lang, master, N. Main St., Haverhill, Mass.; Mrs. Susie A. Goodrich, lecturer; Jay M. Goodrich, secretary. Number of members, 166.
235. AURORA, Pittsburg.—H. A. Blanchard, master; Hattie Johnson, lecturer; Beede Brackett, secretary. Number of members, 71.
290. BAKER'S RIVER West Rumney.—Harry A. Moses, master; Mrs. Eda Moses, lecturer; Mrs. Myrtie E. Wells, secretary. Number of members, 78.

265. BANNER, East Rochester.—Elihu A. Corson, master; Mrs. Mabel Wiggin, lecturer; Mrs. Sabra J. Corson, secretary. Number of members, 71.
119. BARNSTEAD, Center Barnstead.—Thomas J. Otterson, master; Mrs. Charles B. Davis, lecturer; Joseph A. Glines, secretary. Number of members, 57.
104. BARTLETT, Salisbury.—James S. Shaw, master, W. Salisbury; Mrs. M. Esther McClure, lecturer, Penacook, R. F. D., 13. Number of members, 73.
301. BATCHELDER, South Manchester.—O. F. Davis, master, 43 Welch Ave.; Hattie McIntire, lecturer, 33 Welch Ave.; Mary G. Kane, secretary, 26 Welch Ave. Number of members, 83.
295. BAY, Sanbornton.—George A. Leavitt, master, Laconia, R. F. D., 1; Mrs. Alice W. Leavitt, lecturer, Laconia, R. F. D., 1; D. P. Huse, secretary, Laconia, R. F. D., 1. Number of members, 50.
39. BEAR HILL, Henniker.—Dana E. Huntington, master; George E. Chadwick, lecturer; Mrs. Charlotte A. Wilkins, secretary. Number of members, 191.
283. BEAVER, Springfield.—Joseph C. Severance, master; Mrs. Lydia F. Cross, lecturer, West Springfield; Charles E. Bailey, secretary. Number of members, 83.
207. BENNINGTON, Bennington.—Edward Burnham, master; Mary L. Knight, lecturer; Mrs. Mary E. Nourse, secretary, Box 29. Number of members, 78.
289. BERLIN, Berlin.—J. Howard Dyer, master; Mrs. Rodney Garland, lecturer; William Gleason, secretary. Number of members, 50.
203. BETHLEHEM, Bethlehem.—E. E. Bishop, master, Littleton; Ira B. Simonds, lecturer; A. W. Nourse, secretary. Number of members, 142.
152. BLACKWATER, Andover.—Everand C. Perkins, master; Mrs. A. Grace E. Currier, lecturer; Solomon Dodge, Jr., secretary. Number of members, 75.

71. BLAZING STAR, Danbury.—Edward Farnum, master; Georgie Ford, lecturer; Hattie E. Huntoon, secretary. Number of members, 80.
234. BLOW-ME-DOWN, Plainfield.—Charles S. Burr, master; Mrs. Amy L. French, lecturer; Daniel C. Westgate, secretary. Number of members, 85.
232. BLUE MOUNTAIN, Grantham.—Albert L. Shedd, master; Mrs. Agnes Pinney, lecturer; Mrs. Rosina K. Perkins, secretary. Number of members, 85.
189. BOW, BOW.—Robert W. Upton, master, Bow Mills; Mrs. Augusta Morgan, lecturer, Concord, R. F. D., 3; Mrs. Nellie J. Masters, secretary, Concord, R. F. D., 4. Number of members, 177.
80. BOW LAKE, Strafford.—Charles S. Hanson, master; Mary E. Harvell, lecturer; Guy M. Hall, secretary. Number of members, 74.
58. BRADFORD, Bradford.—Timon M. Morse, master; Mrs. Alice B. Smith, lecturer; Marshall Eaton, secretary. Number of members, 38.
211. BROOKLINE, Brookline.—Orville D. Fessenden, master; Lucretia E. Martin, lecturer; Mrs. Susie E. French, secretary. Number of members, 101.
93. CAMPTON, Campton.—George W. Wallace, master; Plymouth; Mrs. Mattie R. Wallace, lecturer, Plymouth, R. F. D., 1; Mrs. Minnie F. Morrison, secretary, Plymouth, R. F. D., 3. Number of members, 76.
167. CANDIA, Candia.—Edward E. Hubbard, master, Manchester, R. F. D., 1; Mrs. Alice L. Brown, lecturer, Manchester, R. F. D., 1; Mrs. Victoria M. Rowe, secretary, Candia, R. F. D., 1. Number of members, 97.
254. CAPE HORN, Northumberland.—Richard Beattie, master, Guildhall, Vt.; Neal Beattie, lecturer, Guildhall, Vt.; Frank N. Piper, secretary. Number of members, 102.

113. CAPITAL, Concord.—John H. Sargent, master; Irving T. Chesley, lecturer; Mrs. Rose W. Flanders, secretary, 30 Thompson. Number of members, 267.
267. CARDIGAN, Alexandria.—Mrs. Eva L. Phillips, master; Mrs. Clara A. Bullock, lecturer; Emogene B. Roby, secretary. Number of members, 68.
160. CARROLL, Ossipee.—Andrew C. Woodward, master, Leighton's Corner; Mrs. Minnie Frey, lecturer, Leighton's Corner; J. E. Hodgdon, secretary, Box 2. Number of members, 69.
97. CATAMOUNT, Pittsfield.—Herbert Giles, master; Mrs. Lyla Giles, lecturer; George Greenleaf, secretary. Number of members, 107.
185. CENTENNIAL, Barrington.—William T. Hale, master; Mrs. Myra N. Waterhouse, lecturer; Mrs. Hattie B. Locke, secretary, No. Barrington. Number of members, 35.
204. CHARLESTOWN, Charlestown.—Joseph Hunt, master; Mrs. L. H. Clarke, lecturer; H. E. Corbin, secretary. Number of members, 81.
131. CHESHIRE, Keene.—D. Minot Spaulding, master. Mrs. Kate B. Spaulding, lecturer; Mrs. Addie F. Hamilton, secretary, 74 Dover St. Number of members, 159.
169. CHESTER, Chester.—Francis E. Robie, master; Walter P. Tenney, lecturer, R. F. D., 2; Mrs. Mary F. Anderson, secretary. Number of members, 88.
201. CHERRY MOUNTAIN, Carroll.—Fred E. Staples, master, Twin Mt.; Mrs. Flora J. Miles, lecturer, Twin Mt.; Mrs. Ethel Poor, secretary, Twin Mt. Number of members, 57.
132. CHICHESTER, Chichester.—George A. L. Towle, master; Jessie F. Lake, lecturer, No. Chichester; Julia E. Langmaid, Secretary, No. Chichester, R. I. Number of members, 91.

165. CHOCORUA, Tamworth.—George F. Batchelder, master; Alice B. Remick, lecturer; Francis P. Remick, secretary. Number of members, 69.
9. CLAREMONT, Claremont.—Florence M. Blanchard, master; Fannie B. White, lecturer; Abbie S. C. Bartlett, secretary. Number of members, 194.
247. CLARKSVILLE, Clarksville.—Willis A. Harriman, master; Mrs. Nellie E. Young, lecturer; Irving G. Young, secretary. Number of members, 27.
81. COCHECO, Dover.—George E. Whipp, master; Geo. D. McDuffee, lecturer, R. F. D., 3; Mrs. Calista A. Willard, secretary, R. F. D., 3. Number of members, 51.
19. COLD RIVER, Acworth.—Charles Clark, master, East Acworth; Louise M. Reed, lecturer, South Acworth; Henry A. Clark, secretary. Number of members, 80.
223. COLEBROOK, Colebrook.—D. Allen Noyes, master; Mrs. Ella V. Stevens, lecturer; Charles W. Brackett, secretary. Number of members, 140.
224. COLUMBIA, Columbia.—Mrs. Fred Stoddard, master, Colebrook; Mrs. Allan Gray, lecturer, Colebrook; Fred S. Prince, secretary, Colebrook. Number of members, 62.
216. CONTOOCOOK, Contoocook.—Arthur C. Call, master; James O. Straw, lecturer, Hopkinton, R. F. D., 15; Mrs. Annie E. Hardon, secretary. Number of members, 125.
256. COOS, North Stratford.—E. D. Baldwin, master; D. E. Rowell, lecturer; Elsie Willard, secretary. Number of members, 79.
25. CORNISH, Cornish.—George E. Fairbanks, master; South Cornish; Ella I. Richardson, lecturer, Cornish Center; Ada E. Weld, secretary, Windsor, Vt. Number of members, 107.

164. CRESCENT LAKE, North Barnstead.—Charles Tuttle, master; J. M. Foss, lecturer; Charles E. Walker, secretary, Alton, R. F. D., 2. Number of members, 56.
65. CROWN POINT, Strafford Corner.—Flavins J. Berry, master, Rochester, R. F. D., 1; Fidelia B. Foss, lecturer, Rochester, R. F. D., 1; Irving B. Berry, secretary, Rochester, R. F. D., 1. Number of members, 126.
101. CRYSTAL LAKE, Gilmanton, I. W.—Mrs. Aura E. Price, master; Alma L. Smith, lecturer; Mrs. Ora A. Thyng, secretary, Pittsfield, R. F. D., 6. Number of members, 71.
100. DANIEL WEBSTER, Webster.—W. S. Putney, master, Contoocook; Henrietta Mock, lecturer; Laura E. Sanborn, secretary. Number of members, 42.
187. DANVILLE, Danville.—Fred C. Quimby, master, South Danville; Mrs. Helen C. Anderson, lecturer; W. Folsom Heath, secretary. Number of members, 72.
74. DEERFIELD, Deerfield Center.—Howard P. King, master, Raymond, R. F. D., 1; Woodbury J. Harvey, lecturer, Deerfield; Arthur M. Chase, secretary. Number of members, 112.
282. DERRY, West Derry.—Mrs. Mary A. Whitney, master; Mrs. Ruth Sargent, lecturer; Elizabeth M. Messer, secretary. Number of members, 74.
286. DERRYFIELD, East Manchester.—Edwin A. Dunbar, master, 148 Massabesic St.; Mrs. Mary F. Bean, lecturer, 728 Massabesic St.; Grace M. Wallace, secretary, 1029 Merrill St. Number of members, 220.
280. DORCHESTER, Dorchester.—George B. Fellows, master; Luella Keazer, lecturer; Azro H. Schoolcraft, secretary, Cheever. Number of members, 63.

225. DOVER, Dover.—George I. Winkley, master, 7 West Concord St.; William H. Peirce, lecturer, R. F. D., 5; Grace M. Clements, secretary, R. F. D., 1. Number of members, 251.
294. EAGLE, North Chatham.—John F. Charles, master; Mrs. Lottie A. Andrews, lecturer; Mrs. Lucretia Chandler, secretary. Number of members, 43.
302. EAST CANDIA, East Candia.—Narah Dearborn, master; Mrs. Mary E. Dearborn, lecturer; Mrs. Lilla I. Dearborn, secretary. Number of members, 50.
227. EDEN, West Milan.—Osmer T. Cole, master; Velmer E. Cole, lecturer; Mrs. Lizzie Wright, secretary. Number of members, 136.
281. ENTERPRISE, Salem Depot.—John Turner, master, Methuen, Mass.; David Hird, lecturer; Frank D. Davis, secretary. Number of members, 92.
69. EUREKA, Grafton.—John E. Smith, master; Carrie Fowler, lecturer, Grafton Center; H. M. Valia, secretary. Number of members, 119.
136. EXCELSIOR, Marlow.—Harlan E. Honey, master; Mrs. Ella E. Abbott, lecturer; Mrs. Catharine Fox, secretary. Number of members, 108.
94. EZEKIEL WEBSTER, Boscawen.—Herbert L. Brown, master; Mrs. E. P. Carter, lecturer; Mrs. Eliza Y. Bent, secretary, Box 13. Number of members, 61.
300. FIDELITY, South Hampton.—Dayton Killam, master, Amesbury, Mass., R., 1; Mrs. Sarah E. Towle, lecturer, Amesbury, Mass., R. 1; Ethel D. Evans, secretary, Amesbury, Mass., R. F. D.; Number of members, 40.
154. FITZWILLIAM, Fitzwilliam.—Elijah Platts, master; Ella Bemis, lecturer; D. F. White, secretary. Number of members, 108.
96. FOREST, Stoddard.—Mrs. Ella Reed, master; Myra Reed, lecturer; Letta Allen, secretary, South Stoddard. Number of members, 60.

108. FRANKLIN, Franklin Falls.—A. H. Manuel, master; Mabelle Osgood, lecturer; Bennie Glines, secretary. Number of members, 126.
140. FREEDOM, Freedom.—Ralph G. Foster, master; Chas. H. Andrews, lecturer; A. G. Fowler, secretary. Number of members, 48.
180. FREMONT, Fremont.—C. Burton French, master; Mrs. Delia C. Smith, lecturer; Mrs. Mary M. Sanborn, secretary. Number of members, 103.
110. FRIENDSHIP, Northfield.—Arthur P. Thomas, master, Tilton; Wilbur B. Frost, lecturer, Tilton; Gertrude B. Ladd, secretary, Tilton. Number of members, 117.
226. FRONTIER, West Stewartstown.—W. F. Allen, master; Mrs. Grace M. Beecher, lecturer; Mrs. Clara P. Harvey, secretary, Canaan, Vt. Number of members, 55.
106. FRUITDALE, Mason.—William H. Doonan, master, Greenville; Mrs. Lizzie G. Smith, lecturer, Townsend Center, Mass.; Mrs. Nellie F. Amsden, secretary. Number of members, 123.
206. GARNET HILL, Center Harbor.—Mrs. Alice Sargent, master; Mrs. Josephine George, lecturer; Hattie Moulton, secretary. Number of members, 64.
277. GENERAL STARK, West Manchester.—William A. Tufts, master, 41 Appleton St.; Annie L. Voigt, lecturer, 68 Parker St.; Ethel M. Tufts, secretary, 41 Appleton St. Number of members, 134.
1. GILMAN, Exeter.—Charles W. Barker, master; Arthur W. Dudley, lecturer; C. Charles Hayes, secretary. Number of members, 103.
279. GLEN, Bartlett.—C. S. Meserve, master, Jackson; Edith Meserve, lecturer, Jackson; Mrs. L. A. Garland, secretary, Glen. Number of members, 70.
73. GOLDEN, Lisbon.—G. E. Powers, master; Kate Atwood, lecturer; Mrs. Viola E. Cutler, secretary. Number of members, 154.

114. GOLDEN ROD, Swanzey.—Frank E. Handy, master; Lucia E. Whitcomb, lecturer; Inez A. M. Thurber, secretary. Number of members, 96.
275. GOOD WILL, Seabrook.—Ellsworth Brown, master; Mrs. Sarah G. Fogg, lecturer; Mrs. Emma Brown, secretary. Number of members, 35.
60. GRAFTON STAR, Hanover.—Don S. Bridgman, master; Mrs. H. A. Stone, lecturer; F. A. Musgrove, secretary. Number of members, 214.
7. GRANITE, Milford.—Frank P. Fisk, master; Mrs. Hannah M. Fisk, lecturer; Mrs. Ida M. Ritchie, secretary, Box 692. Number of members, 206.
115. GRANITE LAKE, Munsonville.—Wm. W. Dunn, master; Mrs. Susie A. McClure, lecturer; C. B. McClure, secretary. Number of members, 43.
149. GRANITE STATE, Newton.—George A. Green, master; Mrs. Frank Davis, lecturer; Mrs. Rosa R. Gurney, secretary. Number of members, 46.
138. GREAT MEADOW, Westmoreland.—James A. Craig, master; Jennie S. Craig, lecturer; Bertha L. Jarvis, secretary. Number of members, 122.
23. GREENFIELD, Greenfield.—Frank E. Russell, master; Fred B. Atherton, lecturer, Lyndeboro', R. F. D.; Jennie M. Hopkins, secretary. Number of members, 60.
195. GREENLAND, Greenland.—George W. Lord, master; Bertha H. Berry, lecturer, Greenland Depot; Mrs. Julia A. Francis, secretary. Number of members, 58.
278. GREENVILLE, Greenville.—John E. Fowler, master; Fannie S. Blood, lecturer; Fred B. Kimball, secretary. Number of members, 68.
255. GROVETON, Groveton.—Judson A. Potter, master; Mrs. Lucy D. Moody, lecturer; Mrs. Cora Hayes, secretary. Number of members, 184.

287. **HALESTOWN**, East Weare.—Arthur E. Eaton, master ; Lucie E. Clough, lecturer ; Mrs. Susan H. Clough, secretary. Number of members, 80.
163. **HAMPSTEAD**, Hampstead.—Mrs. Mary S. F. Smith, master ; George J. Penneo, lecturer ; Anna E. Emerson, secretary. Number of members, 46.
171. **HAMPTON FALLS**, Hampton Falls.—David F. Batchelder, master ; Joseph B. Cram, lecturer ; Frank S. Greene, secretary. Number of members, 65.
99. **HARMONY**, Sanbornton.—Adna E. Hill, master, Laco-
nia, R. F. D., 1 ; Mrs. M. A. Hill, lecturer ; George C. Ward, secretary. Number of members, 57.
212. **HAVERHILL**, Haverhill.—Harry W. Jewett, master ; Mrs. Kate C. Cass, lecturer ; Mrs. N. Della Carbee, secretary. Number of members, 93.
205. **HENRY WILSON**, Farmington.—Frank J. Smith, mas-
ter ; H. Frances Dempsey, lecturer ; Mary Nutter, secretary. Number of members, 135.
88. **HIGHLAND LAKE**, East Andover.—Mrs. Electa C. Flanders, master ; F. H. Flanders, lecturer ; Mrs. Grace E. Kilburn, secretary. Number of members, 109.
274. **HILLSBOROUGH**, Hillsborough.—Orrin S. Huntley, master ; Dana S. Temple, lecturer ; Edith M. Crook-
er, secretary, Hillsborough U. V. Number of mem-
bers, 36.
194. **HIRAM R. ROBERTS**, Rollinsford.—George H. Yeaton, master, Dover, R. F. D., 2 ; E. A. Pugsley, lecturer, Salmon Falls ; Robert Doe, secretary, Dover. Number of members, 124.
12. **HOLLIS**, Hollis.—Edwin H. Stratton, master ; Fred W. Dudley, lecturer ; Mrs. Annie V. Colburn, secre-
tary. Number of members, 182.
153. **HONOR BRIGHT**, East Sullivan.—Arthur H. Rugg, master ; Grace M. Wilder, lecturer ; Leston F. Da-
vis, secretary. Number of members, 118.

148. **HOOKSETT**, Hooksett.—Mrs. Sarah C. Greenough, master; Ada A. Morgan, lecturer; Julia A. Saltmarsh, secretary, Concord, R. F. D., 4. Number of members, 125.
11. **HUDSON**, Hudson.—Mrs. F. M. Cummings, master; Nina B. Cheney, lecturer, Nashua, R. F. D., 3; Clarence E. Walch, secretary. Number of members, 205.
270. **INDEPENDENCE**, North Groton.—Jos. W. Burley, master; John N. Kinne, lecturer; Josiah Wheet, secretary. Number of members, 31.
72. **INDIAN RIVER**, Canaan.—Frank A. Doten, master; Mrs. Cora B. Smith, lecturer; Mrs. Ola M. Wilson, secretary. Number of members, 135.
135. **JAFFREY**, Jaffrey.—Mrs. Clara B. Cutler, master; Mrs. Alice W. Poole, lecturer; Mrs. Clara A. Lawrence, secretary, East Jaffrey. Number of members, 152.
161. **JEREMIAH SMITH**, Lee.—Arthur J. Thompson, master; Mrs. Emma S. Wiggin, lecturer, Dover, R. F. D., 5; Mrs. Grace B. Dudley, secretary, Newmarket, R. F. D., 1. Number of members, 62.
245. **JEWEL**, Columbia.—Erwin Fitts, master, So. Columbia; Flora Hapgood, lecturer, So. Columbia; Georgia Hapgood, secretary, So. Columbia. Number of members, 39.
53. **JOE ENGLISH**, New Boston.—G. Arthur Leach, master; Fred C. Brown, lecturer; Elsie G. Warren, secretary. Number of members, 71.
33. **JOHN HANCOCK**, Hancock.—A. G. Brooks, master; H. F. Robinson, lecturer, Elmwood; C. H. Dutton, secretary, Bennington. Number of members, 99.
150. **JUNIOR**, Grasmere.—Lewis H. Putnam, master, R. F. D., 1; Mrs. Isadore Tirrell, lecturer, R. F. D., 1; Frank P. Stevens, secretary, Manchester, R. F. D., 3. Number of members, 141.

87. KEARSARGE, Wilmot.—Herbert S. Clay, master, So. Danbury; Mary E. Clay, lecturer, So. Danbury; Fred E. Longley, secretary, Wilmot Flat. Number of members, 83.
172. KEENEBOURGH, Brentwood.—John F. Swasey, master, Exeter; Chas. Flanders, lecturer; Clara A. Abbott, secretary. Number of members, 90.
173. KENSINGTON, Kensington.—Henry W. Brown, master; Florence Batchelder, lecturer; Horace P. Blodgett, secretary. Number of members, 100.
177. KINGSTON, Kingston.—Mrs. Carrie B. Marsh, master; Mrs. Mary A. Bartlett, lecturer; J. W. Prescott, secretary. Number of members, 67.
120. LACONIA, Laconia.—F. M. Beckford, master; Mrs. L. J. Severance, lecturer, Lakeport; John H. Robinson, secretary, Lakeport. Number of members, 143.
208. LAFAYETTE, Franconia.—W. B. Chase, master; W. A. Brooks, lecturer; Mrs. Lydia E. Gould, secretary. Number of members, 77.
221. LAKE, Sunapee.—George E. Gardner, master; John Z. Bartlett, lecturer; Geo. Dodge, secretary. Number of members, 114.
128. LAKE SHORE, Wolfeborough.—Benjamin F. Burleigh, master; Mabel E. Fullerton, lecturer; Mrs. Clara F. Burleigh, secretary. Number of members, 185.
240. LAMPREY RIVER, Newmarket.—James M. Caswell, master; Ida M. Pinkham, lecturer, Lock Box 32; Fred J. Durell, secretary. Number of members, 133.
48. LANCASTER, Grange.—I. E. Wentworth, master, Lancaster, R. F. D., 1; Mrs. Ella J. Hartwell, lecturer, Lancaster, R. F. D., 1; W. R. Stockwell, secretary, Lancaster, R. F. D., 1. Number of members, 136.
117. LAWRENCE, Belmont.—Fred W. Bickford, master; Mrs. Lillian K. Gilman, lecturer; Truman S. French, secretary. Number of members, 173.

126. **LEBANON**, Lebanon.—Frank J. Bryant, master; Fred E. Buck, lecturer; Martha A. Slayton, secretary. Number of members, 214.
193. **LEWIS W. NUTE**, Milton.—Charles A. Jones, master; Mrs. E. C. Jones, lecturer; Chas. H. Cole, secretary. Number of members, 38.
159. **LINCOLN**, West Swanzey.—C. Ned Eames, master; Mrs. Grace White, lecturer; Mrs. Carrie E. Young, secretary. Number of members, 89.
44. **LONDONDERRY**, Londonderry.—Mrs. Mattie M. Anderson, master; Geo. W. Robie, lecturer; Frank L. Thomas, secretary. Number of members, 117.
273. **LOUDON CENTER**, Loudon Center.—Albert E. Colcord, master, Loudon; Georgia L. Powell, lecturer, Pittsfield, R. F. D.; Loren A. Currier, secretary, Loudon. Number of members, 52.
121. **LOUDON SURPRISE**, Loudon.—Alfred P. Batchelder, master; Walter Brown, lecturer; Olive G. Batchelder, secretary. Number of members, 89.
5. **LOVELL**, Washington.—Sumner N. Ball, master; Sophia Carley, lecturer; Albert T. Wright, secretary. Number of members, 51.
178. **LOVELL UNION**, Sanbornville.—Mrs. G. P. Blake, master; J. T. Palmer, lecturer; Mrs. Rosa Robinson, secretary. Number of members, 54.
237. **LYMAN**, Lyman.—Harvey D. Corey, master, Lisbon, R. F. D., 1; Mrs. Willard Chase, lecturer, Lisbon, R. F. D., 1; Mrs. Fred Foster, secretary, Littleton, R. F. D., 1. Number of members, 110.
118. **MARLBOROUGH**, Marlborough.—Mrs. Addie R. Lawrence, master; Lena J. Clark, lecturer; Nettie E. Whitney, secretary. Number of members, 155.
134. **MARSHALL P. WILDER**, East Rindge.—Wm. F. Robins, master; M. Alice Dunn, lecturer; Israel H. Truman, secretary. Number of members, 58.

68. MASCOMA, West Canaan.—R. S. Cross, master, Enfield; Mrs. Jennie Paddleford, lecturer, East Lebanon; H. L. Webster, secretary. Number of members, 104.
220. MASCOT, Gorham.—Ernest S. Wood, master, Randolph; Lena L. Lowe, lecturer, Randolph; Mrs. Ethelwin Lowe, secretary, Randolph. Number of members, 38.
127. MASSABESIC, Auburn.—Hugh J. Crombie, master; Mrs. Cora C. Emery, lecturer; Thomas S. Emery, secretary. Number of members, 64.
297. MAYFLOWER, North Londonderry.—Chas. H. Watts, master; Joshua F. Wheeler, lecturer; Mrs. Evelyn M. Watts, secretary, Manchester, R. F. D., 5; Number of members, 34.
102. McCLARY, Epsom.—George H. Haynes, master; Walter H. Tripp, lecturer; Mrs. Annie M. Fowler, secretary. Number of members, 164.
151. MERIDEN, Meriden.—Nathan R. Andrews, master; Nellie F. Andrews, lecturer; Electa H. Chellis, secretary. Number of members, 74.
4. MERRIMACK RIVER, Canterbury.—Geo. A. Colby, master; Ella Merrill, lecturer; Ida M. Kimball, secretary. Number of members, 64.
155. MERRY MEETING, Alton.—Fred S. Gilman, master; Isabelle Harrington, lecturer; Sadie A. Currier, secretary. Number of members, 73.
34. MILLER, Temple.—John E. Colburn, master; Mrs. Maude E. Fisk, lecturer; D. C. Bragdon, secretary, Wilton, R. F. D. Number of members, 60.
192. M. L. WARE, West Rindge.—Mrs. Alta M. Whitney, master; Mrs. Nellie M. Sargent, lecturer, Rindge; Amy B. Taggart, secretary. Number of members, 134.
217. MOHAWK, Colebrook.—Mrs. Emma Harriman, master; Oliver Hanson, lecturer; Irving C. Woodrow, secretary. Number of members, 105.

103. MONADNOCK, Dublin.—Mrs. Sarah Royce, master; East Harrisville; Mrs. Eva A. Learned, lecturer; Sarah F. Townsend, secretary. Number of members, 132.
49. MONROE, Monroe.—W. E. Emery, master; Mrs. W. E. Emery, lecturer; Julia J. Aiken, secretary, McIndoes, Vt. Number of members, 109.
70. MONT CALM, Enfield.—W. G. Dresser, master, Enfield Center; Harriet Gardner, lecturer, Enfield Center; Val M. Clough, secretary, West Canaan. Number of members, 145.
214. MOOSILAUKE, East Haverhill.—Everett H. Smith, master; Mrs. Kate Cross, lecturer; Lila M. True, secretary. Number of members, 94.
62. MORNING STAR, Lyme.—David A. Grant, master; Mrs. J. F. Elliott, lecturer; Mrs. Fannie S. Goodell, secretary. Number of members, 236.
197. MOULTONBOROUGH, Moultonborough.—Robert Lee, master; Mrs. Flora B. Haley, lecturer; Maude L. Tilton, secretary. Number of members, 72.
215. MOUNTAIN LAUREL, Northwood.—Samuel W. Gerish, master; Mrs. Blanche N. Foye, lecturer; Alice L. Chesley, secretary. Number of members, 82.
52. MOUNT BELKNAP, Gilford.—Frank Glidden, master; Ethel N. Jewett, lecturer, Lakeport; Ida I. Glidden, secretary, R. F. D., 4. Number of members, 91.
236. MOUNT CUBE, Orfordville.—George E. Weeks, master; Mrs. M. W. Cushman, lecturer; Mrs. Frances Morrison, secretary. Number of members, 68.
246. MT. DUSTON, Wentworth's Location.—M. D. Sturtevant, master; Mary Linnell, lecturer; Ray Linnell, secretary. Number of members, 39.
218. MOUNT GARDNER, Woodsville.—M. W. Howland, master; D. K. Eastman, lecturer; Mrs. Caroline R. Little, secretary. Number of members, 105.

77. MOUNT HOPE, Landaff.—Fred W. Linde, master; Lisbon, R. F. D., 2; Mrs. E. A. Heath, lecturer, Lisbon, R. F. D., 2; Mrs. Effie E. Smart, secretary, Lisbon, R. F. D., 2. Number of members, 59.
158. MOUNT ISRAEL, Sandwich.—Eugene Wallace, master; Sandwich Center; Carl S. Dorr, lecturer, Sandwich Center; Howard Heard, secretary, Sandwich Center. Number of members, 140.
288. MOUNT LIVERMORE, Holderness.—Ross P. Sanborn, master; Agnes M. Rogers, lecturer; Mrs. Ida M. Cox, secretary. Number of members, 96.
242. MOUNT PROSPECT, Lancaster.—Edgar B. Morse, master; Lillian Rosebrook, lecturer; C. C. Straw, secretary. Number of members, 193.
116. MOUNT WASHINGTON, Whitefield.—Frank B. Brooks, master; Mrs. Anna Spaulding, lecturer; Mrs. Chas. E. King, secretary. Number of members, 132.
46. NARRAGANSETT, Bedford.—Wm. Melendy, Jr., master; Manchester, R. F. D., 8; Alice L. Barnard, lecturer, Manchester, R. F. D., 7; Mrs. Mary A. Gove, secretary. Number of members, 177.
13. NASHUA, Nashua.—Harrie Mitchell, master, R. F. D., 2; Harvey Whitcomb, lecturer, 21 Spring St.; Mrs. N. H. Trenholm, secretary, 30 Summer St. Number of members, 255.
241. NAUMKEAG, Litchfield.—Isaac N. Center, master, Hudson, R. F. D., 1; Mrs. S. Grace Saunders, lecturer, Hudson, R. F. D., 1; Mrs. Anne A. Bancroft, secretary, Manchester, R. F. D., 5. Number of members, 57.
262. NEW DURHAM, New Durham.—Geo. D. Burnham, master; Carrie A. Miller, lecturer; Walter N. Miller, secretary. Number of members, 58.
162. NEWFOUND LAKE, Bristol.—Frank G. Bartlett, master; Norman McMurphy, lecturer, R. F. D., 1; Mrs. J. N. McMurphy, secretary, R. F. D., 1. Number of members, 143.

123. NEW HAMPTON, New Hampton.—Chas. D. Thyng, master; E. Villa Ordway, lecturer; Hadley B. Worthen, secretary, Bristol. Number of members, 118.
95. NEW LONDON, New London.—Herman P. Messer, master; Gustie Messer, lecturer; Geo. W. Philbrick, secretary. Number of members, 149.
250. NORTH HAMPTON, North Hampton.—J. Allan Fenwick, master; Nellie E. Taylor, lecturer; Albert E. Locke, secretary. Number of members, 113.
27. NORTH STAR, Stewartstown.—Fay Tibbetts, master; Mrs. Cora Brown, lecturer, Beecher Falls, Vt.; O. J. Poore, secretary. Number of members, 142.
209. NORTHWOOD, Northwood Narrows.—Orrin M. James, master; Mrs. M. I. MacKensie, lecturer; Mattie B. James, secretary. Number of members, 42.
263. NUBAUNSIT, Harrisville.—Walter L. Blodgett, master; Margaret Venable, lecturer; Harriet Tuttle, secretary. Number of members, 55.
37. NUTFIELD, Derry.—Frank A. Clark, master; Lula B. Sargent, lecturer, West Derry; E. Bertha Clarke, secretary. Number of members, 76.
32. OAK HILL, Francestown.—Frank H. Robinson, master; Flora M. Farnum, lecturer; Cora Wood Patch, secretary. Number of members, 116.
260. OCEAN SIDE, Hampton. Frank B. Brown, master; Miss L. Batchelder, lecturer; Mrs. Evelyn M. Mack, secretary. Number of members, 64.
79. OLIVE BRANCH, Hebron.—Fred B. Huckins, master; Mrs. Florence B. Smith, lecturer, East Hebron; Mrs. Mary A. Rogers, secretary. Number of members, 71.
296. OSCEOLA, Campton Village.—George H. Green, master; Mrs. Anna Babbitt, lecturer, West Campton; Mrs. Eva M. Cook, secretary. Number of members, 60.

175. OSSIPEE LAKE, Ossipee.—Chas. Suggel, master; Mrs. W. S. Chase, lecturer; Blanche E. Merrow, secretary. Number of members, 34.
130. OSSIPEE MOUNTAIN, Tuftonborough.—Charles E. Ham, master; Ella F. Beane, lecturer; Katie E. Brown, secretary, Water Village. Number of members, 77.
249. PARK, Cornish Flat.—Edwin L. Child, master; Joseph S. Chase, lecturer; Mrs. Lucy C. Weld, secretary. Number of members, 73.
299. PARKER MOUNTAIN, Strafford Center.—Hiram S. Hill, master; Mrs. Emma L. P. Foss, lecturer; Mrs. George E. Foss, secretary. Number of members, 78.
266. PASQUANEY, Bridgewater.—Chas. H. Marston, master; Harry W. Smith, lecturer; Clara P. Fifield, secretary. Number of members, 25.
166. PATUCCOWAY, Nottingham.—James H. Kelsey, master; Mrs. S. A. Watson, lecturer; M. E. Kelsey, secretary. Number of members, 69.
269. PEAKED HILL, Gilmanton.—Nahum Wight, master; Bessie M. Knowles, lecturer; Mrs. Margaret Downing, secretary. Number of members, 75.
244. PELHAM, Pelham.—Willis E. Pearson, master; Edith N. Spear, lecturer; Mary E. Hobbs, secretary. Number of members, 225.
111. PEMBROKE, Pembroke.—Eldon W. Boynton, master; Suncook; Samuel D. Robinson, lecturer, Concord, R. F. D., 14; Frank T. Cheney, secretary. Number of members, 240.
107. PEMIGEWASSETT, Hill.—Fred A. Fowler, master; Mrs. Clara Payne, secretary. Number of members, 31.
184. PENACOOK PARK, West Concord.—Alonzo L. Sawyer, master; J. E. Shepard, lecturer, Center St., Penacook; Geo. W. Phillips, secretary. Number of members, 108.

146. PEQUAWKET, North Conway.—Everett S. Whittemore, master, Intervale; John L. Pendexter, lecturer, Intervale; Mrs. Janette M. Pendexter, secretary, Intervale. Number of members, 106.
35. PETERBOROUGH, Peterborough.—C. W. Abbott, master; Jennie M. Hadley, lecturer; Bertha M. Hadley, secretary. Number of members, 183.
219. PIERMONT, Piermont.—J. O. Evans, master; Will E. Ford, lecturer; Grace Melendy, secretary. Number of members, 117.
229. PILOT, Stark.—Chas. A. Cole, master, Percy; Mrs. Lillian Olesen, lecturer, Groveton; Mrs. Etta M. Cole, secretary, Percy. Number of members, 85.
291. PIKE STATION, Pike.—Frank J. Aldrich, master; Mrs. Nancy Merrill, lecturer; Emile Blank, secretary. Number of members, 70.
298. PINE GROVE, Bath.—Ira E. Deming, master, Woodsville; Edith Chase, lecturer; Ned C. Deming, secretary, Woodsville, R. F. D. Number of members, 71.
210. PINK GRANITE, North Haverhill.—Will W. White, master; Mrs. Alma Clark, lecturer, Pike, R. F. D., 2; J. E. Eastman, secretary. Number of members, 123.
18. PINNACLE, Lyndeborough.—C. L. Perham, master; Wilton; Mrs. S. Kate Swinnington, lecturer, Wilton; L. Nute Woodward, secretary, Wilton. Number of members, 57.
176. PISCATAQUA, Newington.—Mrs. Laura E. Drew, master, Dover Point; E. Oscar Pinkham, lecturer, Dover Point; Martha Coleman, secretary. Number of members, 49.
145. PISTAREEN, Spofford.—M. E. Chandler, master; Nathan Puffer, lecturer; H. C. Hamilton, secretary. Number of members, 48.
186. PLAISTOW, Plaistow.—

272. PLEASANT VALLEY, Milton Mills.—C. A. L. Treadwell, master; Mrs. Anna Pinafold, lecturer; Mrs. Jennie Philbrick, secretary. Number of members, 32.
230. PLYMOUTH, Plymouth.—I. J. Smith, master; Alice C. Spalding, lecturer; Ira C. Mitchell, secretary. Number of members, 195.
257. PRENTICE HILL, East Alstead.—Charles E. Ellis, master; Addie F. Ross, lecturer; Nettie M. Gates, secretary. Number of members, 60.
259. PROFILE, North Woodstock.—Leander F. Parker, master; Mrs. E. D. Burtt, lecturer; Bertha F. Parker, secretary. Number of members, 78.
271. PROGRESSIVE, Deerfield.—Chester E. Maynard, master, Raymond, R. F. D., 1; Ella M. Sanborn, lecturer, Leavitt's Hill; Albert F. Sanborn, secretary, Leavitt's Hill. Number of members, 78.
21. PROSPECT, Mont Vernon.—John M. Fox, master; Eunice A. Fox, lecturer; Mrs. Carrie F. Trow, secretary. Number of members, —.
268. PURLING BECK, E. Washington.—Chas. W. J. Fletcher, master; Hannah Trecartin, lecturer; Cora E. Muzzey, secretary. Number of members, 50.
213. RAYMOND, Raymond.—Will B. Gile, master; James M. Healey, lecturer; Annie L. Healey, secretary. Number of members, 141.
147. RICHMOND, Richmond.—Almon Twitchell, master; Mrs. Nellie H. Prescott, lecturer; Mrs. Lucy W. Amidon, secretary. Number of members, 115.
293. RIVERDALE, Riverdale.—Harry H. Simons, master; Alice M. Barnard, lecturer; Henry H. Brown, secretary. Number of members, 59.
137. RIVERSIDE, Dalton.—E. L. Aldrich, master, Lancaster, R. F. D., 2; Mrs. Bertha Aldrich, lecturer, Scott; Mrs. Susie A. Morse, secretary, Lancaster, R. F. D., 2. Number of members, 89.

86. ROCHESTER, Rochester.—W. I. N. Thompson, master ; Mrs. Hattie W. Roberts, lecturer, Box 1 ; Mrs. Anna G. Weeks, secretary. Number of members, 234.
183. ROCKINGHAM, Epping.—James F. Brown, master ; Daniel Slattery, lecturer, North Epping ; Mrs. Grace A. Ladd, secretary. Number of members, 77.
284. ROCKLAND, George's Mills.—Dura A. Chase, master ; Ina E. Bartlett, lecturer ; Innez L. Russell, secretary. Number of members, 54.
109. RUMFORD, East Concord.—Wesley O. Field, master ; Mrs. Mabel Sanborn, lecturer ; Elizabeth M. French secretary, Concord, R. F. D., 5. Number of members, 101.
188. RUMNEY, Rumney.—George P. Loveland, master ; Mrs. W. W. Baker, lecturer, Quincy ; Mrs. C. A. Craig, secretary. Number of members, 139.
233. RYE, Rye.—Edgar J. Rand, master ; Clara E. Parsons, lecturer, West Rye ; Clara O. Walker, secretary. Number of members, 96.
285. SACO VALLEY, Center Conway.—W. R. Burnell, master ; A. T. Cole, lecturer, R. F. D. ; John F. Stott, secretary, R. F. D. Number of members, 74.
168. SALEM, Salem.—William A. Joy, master, Salem Depot ; Mrs. Eva L. Allen, lecturer ; Florence L. Butler, secretary. Number of members, 168.
181. SANDOWN, Sandown.—Gertrude S. Pillsbury, master, East Hampstead ; Mrs. Nellie C. Sanborn, lecturer ; John G. Goodwin, secretary. Number of members, 66.
122. SCAMMELL, Durham.—Mrs. Hattie S. Watson, master, Dover, R. F. D., 6 ; F. William Rane, lecturer ; Lucien Thompson, secretary. Number of members, 101.
105. SILVER LAKE, Harrisville.—Perley S. Bemis, master ; Mrs. Hattie L. Russell, lecturer ; Bertha C. White, secretary. Number of members, 55.

196. SILVER MOUNTAIN, Lempster.—Frank W. Huntoon, master; Herbert F. Olmstead, lecturer; Mrs. Susie B. Hurd, secretary. Number of members, 107.
264. SOMERSWORTH, Somersworth.—G. A. Priestly, master, Pleasant St.; Emma E. Tibbetts, lecturer, Berwick, Me.; Henry H. Brackett, secretary, 31 Grand St. Number of members, 95.
10. SOUHEGAN, Amherst.—Mrs. Viola R. Dodge, master; F. A. Hanson, lecturer; Mrs. Alice K. Peaslee, secretary. Number of members, 145.
179. SOUTH NEWMARKET, Newfields.—Daniel R. Smith, master; Lillian M. Burley, lecturer, Newmarket; Laura A. Neal, secretary. Number of members, 53.
83. SPOFFORD, West Chesterfield.—George P. Smith, master; S. L. Rice, lecturer, Brattleboro, Vt.; Orrin D. Farr, secretary. Number of members, 106.
258. SQUAM LAKE, Ashland.—Henry W. Stevens, master; Mrs. Amelia A. Nichols, lecturer; Joseph H. Morrison, secretary, Plymouth, R. F. D., 2. Number of members, 70.
42. STARK, Dunbarton.—Philander M. Lord, master, Goffstown, R. F. D., 1; Ethel C. Stone, lecturer, Concord R. F. D., 2; Josephine K. Page, secretary, Goffstown, R. F. D., 1. Number of members, 90.
124. STARR KING, Jefferson.—L. D. Keniston, master, Starrking; Mrs. L. D. Keniston, lecturer, Starrking; Mrs. Evy C. Cotton, secretary, Starrking. Number of members, 92.
238. STRATFORD, Stratford.—John N. Connary, master; Effie Atherton, lecturer; Arthur G. Stone, secretary. Number of members, 66.
251. STRAWBERRY BANK, Portsmouth.—Charles Reynolds, master; Mrs. Edw. Paterson, lecturer; W. W. Dunbar, secretary. Number of members, 169.
222. SUGAR HILL, Sugar Hill.—Elkanah Hildrith, master; Mrs. Effie S. Bowles, lecturer; Mrs. Mary Bowles, secretary. Number of members, 72.

190. SUGAR RIVER, North Charlestown.—Mrs. Alice Adams, master; Mrs. Blanch Roberts, lecturer; Eno Linquest, secretary. Number of members, 64.
8. SULLIVAN, Newport.—Ray E. Tenney, master; Geo. H. Parker, lecturer; Ada R. Tenney, secretary. Number of members, 183.
112. SUNAPEE LAKE, South Newbury.—Charles H. Brockway, master, Newbury; Mrs. Jennie E. Folsom, lecturer, Newbury; John H. Gillingham, secretary. Number of members, 108.
144. SUNAPEE MOUNTAIN, Goshen.—John C. Gocha, master, Mill Village; Mrs. Spedie Newton, lecturer, East Unity; Isabelle Johnson, secretary, Mt. Sunapee. Number of members, 137.
156. SURRY, Surry.—Cyrus Kingsbury, master; Ethel M. Newton, lecturer; Francis F. Field, secretary. Number of members, 52.
91. SUTTON, Sutton.—Warren F. Morgan, master; Eva J. Chadwick, lecturer; Linda M. Morgan, secretary. Number of members, 84.
248. THE WEIRS, The Weirs.—Everett L. Evans, master; Mrs. Maude D. Wilcomb, lecturer; Mrs. Mabel L. Smith, secretary. Number of members, 48.
31. THORNTON, Merrimack.—Norris E. Hendeson, master, Reed's Ferry; Mary E. Melvin, lecturer, Thornton's Ferry; Minnie Corning, secretary. Number of members, 134.
157. TROJAN, Troy.—John H. Congdon, master; Estella Buckwold, lecturer; Abbie E. Applin, secretary. Number of members, 48.
142. TUFTONBOROUGH, Tuftonborough.—Leonard C. Canney, master; Robert Lamprey, lecturer, Center Tuftonborough; Mrs. Josie E. Young, secretary, Center Tuftonborough. Number of members, 110.
231. UMBAGOG, Errol.—Norton N. Ferren, master; Nettie C. Thurston, lecturer; Lewis C. Bragg, secretary. Number of members, 80.

40. UNCANOONUC, Goffstown.—Will P. Hadley, master; Mrs. Annie Stevens, lecturer; Mrs. Georgia F. Martin, secretary, R. F. D., 1. Number of members, 173.
56. UNION, Hopkinton.—Albert F. Runnells, master, Concord, R. F. D., 1; Mrs. H. C. Day, lecturer, Concord, R. F. D., 1; Leown H. Kelley, secretary, Concord, R. F. D., 1. Number of members, 80.
230. UNITY, Unity.—Homer F. Wright, master, East Unity; Mrs. Florence LaClair, lecturer; Mrs. Carrie E. Reed, secretary. Number of members, 101.
63. VALLEY, Hillsborough.—Alma C. Wellman, master, Hillsborough Bridge; Fred A. McClintock, lecturer; Mrs. Jessie A. McClintock, secretary. Number of members, 137.
125. WALPOLE, Walpole.—Dean Smalley, master; C. J. Richards, lecturer; Willie G. Leonard, secretary. Number of members, 156.
133. WANTASTQUIT, Hinsdale.—Ezra B. Pike, master; Mrs. Grace M. Day, lecturer; Florence V. Goddard, secretary. Number of members, 84.
90. WARNER, Warner.—Arthur M. Tucker, master, R. F. D., 1; George L. Flanders, lecturer, R. F. D., 2; Stella M. Bean, secretary. Number of members, 214.
200. WARREN, Warren.—F. N. Upton, master; Emma Rogers, lecturer; Belinda Bachelder, secretary. Number of members, 84.
47. WARREN POND, Alstead.—Hope L. Lovell, master, Drewsville; Mrs. Belle H. Trow, lecturer; Leslie P. Forristall, secretary. Number of members, 97.
36. WATATIC, New Ipswich.—A. L. Balch, master; Mrs. Mary L. Balch, lecturer; Dollie S. Jaquith, secretary, Ashby, Mass. Number of members, 67.
276. WEARE, North Weare.—Edward T. Breed, master; Mrs. Mary F. Simonds, lecturer; Mrs. A. Lou Breed, secretary. Number of members, 108.

253. WEST THORNTON, Thornton.—J. A. Kendall, master, West Thornton; Anna Kendall, lecturer, West Thornton; Mrs. Roxie A. Willey, secretary, West Thornton. Number of members, 87.
199. WENTWORTH, Wentworth.—Eugene C. Downing, master; Mrs. Charlotte D. White, lecturer; Katie B. Foster, secretary, West Rumney. Number of members, 143.
50. WHITE MOUNTAIN, Littleton.—Albert J. Richardson, master; Hattie M. Heald, lecturer; Leslie F. Bean, secretary. Number of members, 301.
292. WICWAS LAKE, Meredith Center.—Wm. B. Smith, master, Lakeport, R. F. D., 2; Andrew L. Felker, lecturer; Eva L. McLellan, secretary. Number of members, 28.
182. WINDHAM, Windham.—Herbert C. Russell, master, West Windham; William L. Emerson, secretary. Number of members, 53.
198. WINNISQUAM, East Tilton.—Freeman D. Gilman, master, Laconia, R. F. D.; Mrs. A. M. Foss, lecturer; W. H. H. Rollins, secretary. Number of members, 101.
170. WINNICUTT, Stratham.—Geo. L. Barker, master; Susie O. French, lecturer; Frank H. Pearson, secretary. Number of members, 79.
31. WINNIPESAUKEE, Meredith.—A. J. Mead, master; S. Percy Smith, lecturer; S. Gertrude Watson, secretary. Number of members, 209.
41. WOLF HILL, Deering.—Chas. F. McNally, master; Mrs. Chas. Osborne, lecturer, East Deering; Edith M. Ellsworth, secretary. Number of members, 69.
54. WYOMING, South Weare.—Ezra C. Eastman, master; Alice L. Smith, lecturer; Mrs. Ellen A. Gould, secretary, Riverdale. Number of members, 77.

**NEW HAMPSHIRE
HORTICULTURAL SOCIETY.**

Quincy, N. H., December, 1904.

To His Excellency, Gov. N. J. Bachelder :

Sir: I transmit herewith copies of the transactions of the New Hampshire Horticultural Society for the years 1903 and 1904 for publication in the report of the State Board of Agriculture as required by law.

Very respectfully,

W. D. BAKER, Secretary.

NEW HAMPSHIRE HORTICULTURAL SOCIETY.

OFFICERS FOR 1903.

President, C. C. SHAW, Milford.
Vice President, JOHN T. HARVEY, Pittsfield.
Secretary, W. D. BAKER, Quincy.
Treasurer, THOS. E. HUNT, Lakeport.

EXECUTIVE COMMITTEE

E. M. SHAW, Nashua.
GEORGE F. SMITH, Meredith.
F. WM. RANE, Durham.

DIRECTORS.

George F. Beede, Fremont; James M. Hayes, Dover;
George F. Smith, Meredith; George F. Gridley, Wolfe-
borough; J. T. Harvey, Pittsfield; V. C. Gilman, Nashua;
D. C. Stearns, Winchester; George F. Whitcomb, Clare-
mont; J. W. Farr, Littleton; B. A. Corbett, Colebrook.

POMOLOGIST.

Prof. F. Wm. Rane, Durham.

MYCOLOGIST.

Dr. H. H. Lamson, Durham.

ENTOMOLOGIST.

Prof. C. M. Weed, Durham.

LEGISLATIVE COMMITTEE.

C. C. Shaw, Milford ; W. D. Baker, Quincy ; W. H. Stinson, Dunbarton ; V. C. Gilman, Nashua ; C. M. Weed, Durham.

At the annual meeting in January, 1903, Prof. C. M. Weed of Durham offered a resolution asking for the enactment, by the legislature then in session, of a law to prevent the introduction of diseased nursery stock into the state and to provide for a state nursery inspector to enforce the law. This resolution was unanimously adopted, as was also a resolution offered by Prof. F. Wm. Rane asking for suitable legislative action in behalf of the Horticultural Department of the College at Durham.

The secretary was instructed to prepare and secure the introduction in the legislature of a bill relative to the state aid for the Horticultural Society.

The legislature enacted the following law relative to the introduction and sale of nursery stock.

AN ACT to Authorize the State Board of Agriculture to Appoint a State Nursery Inspector and to Provide for the Protection of Trees and Shrubs from Injurious Insects and Diseases.

Be it Enacted by the Senate and House of Representatives in General Court convened.

SECTION 1. The state board of agriculture shall annually appoint some person qualified by scientific training and practical experience, to be state nursery inspector, and he shall be responsible to the board for the performance of his duties as prescribed in this act. The said inspector may appoint such number of deputies, not exceeding two, as he may deem necessary or expedient.

SECT. 2. It shall be the duty of the state nursery inspector, either personally or through his deputies, to in-

spect at least once each year all nurseries or places in the state where nursery stock is grown, sold or offered for sale, and if no dangerous insect or fungous pest are found therein a certificate to that effect shall be given. If such pests are found therein the owner of the stock shall take such measures to suppress the same as the state nursery inspector shall prescribe, and no certificate shall be given until the said inspector has satisfied himself by subsequent inspections that all such pests have been suppressed.

SECT. 3. Any owners of nurseries or of places in the state where nursery stock is grown, sold or offered for sale, who do not hold an unexpired certificate of inspection after the first annual inspection made after the passage of this act, who shall sell or otherwise dispose of nursery stock in the state, shall be subject to a penalty of not less than twenty-five nor more than one hundred dollars for each offense.

SECT. 4. Any owners of nurseries or of places in the state where nursery stock is grown, sold or offered for sale, who shall fumigate with hydrocyanic acid gas all stock which they sell, using at least two-tenths of a gram of potassic cyanide to every cubic foot of space contained in the box, house or other place wherein this fumigation is performed, which place shall be gas tight, and who shall expose the said stock to the fumes of this gas of the strength aforesaid for at least forty minutes, or who shall treat the stock which they sell by some other method approved by the state nursery inspector, and who shall make affidavit before a justice of the peace that all stock sold by them has thus been fumigated or treated, and who shall attach a copy of such affidavit to each package, box or car of stock sold, may be exempt from the provisions of sections two and three of this act.

SECT. 5. All nursery stock shipped into this state from any other state, country or province shall bear on each box or package an unexpired certificate that the contents of said box or package have been inspected by a duly au-

thorized inspecting officer, and that said contents appear to be free from all dangerous insects or diseases. In case nursery stock is brought within the state without such a certificate the consignee shall return it to the consignor at the expense of the latter, or shall call the state nursery inspector to inspect the same; provided, however, that any package or box bearing a certificate of fumigation which meets the requirements specified in section four of this act may be accepted as though bearing a proper certificate of inspection.

SECT. 6. The state nursery inspector shall determine the season for inspecting nurseries and the forms of certificates to be given, but in no case shall he issue a certificate which shall continue in force after the first day of July next following the date of inspection. He or any of his deputies shall at all times have the right to enter any public or private grounds in the performance of any duty required by this act. The cost of said inspection shall not exceed \$300 annually.

SECT. 7. All parties violating this act shall be prosecuted by the secretary of the state board of agriculture.

SECT. 8. This act shall take effect upon its passage.

Approved March 4, 1903.

The Horticultural Department at Durham was given \$7,000.00 and the Horticultural Society was given an annual appropriation of \$300.00 per year.

In accordance with a vote passed at the annual meeting the secretary prepared a report for publication containing accounts of the meetings and exhibits held during the past two years and the papers presented at them. This report would make a volume of about 100 pages and was duly sent to the printer for an estimate of cost of publication, but for lack of funds the report was not published.

The American Pomological Society having decided to hold its twenty-eighth biennial meeting at Boston Sept. 10,

11 and 12, 1903, the executive committee decided to have the State Horticultural Society represented at the fruit exhibit and the secretary was instructed to prepare and send to members and other fruit growers a circular calling attention to the meeting and asking for choice samples of fruit to be sent for exhibition and the secretary was further instructed to collect and care for the same. Although fruit was very scarce this year, many of our largest exhibitors and growers not having any apples, yet fine specimens were secured from the following named persons: Henry Coffin, No. Boscawen; George E. Graham, Warner; Harry B. Sanborn, E. Concord; George E. Pulsifer, Plymouth; George F. Smith, Meredith; F. H. Smith, Meredith; T. E. Hunt, Lakeport; J. F. Smith, Meredith; W. E. Floyd, Weirs; P. W. Merrill, Lakeport, and Pres. C. C. Shaw also made a fine exhibit of pears as well as apples. In spite of the scarcity of fruit in our state we made the best exhibit of any eastern state and were awarded a silver medal therefor by the Pomological Society.

ANNUAL EXHIBIT AT NEWPORT, 1903.

On invitation of Hon. Seth M. Richards of Newport and Sullivan Grange of the same town, the ninth annual exhibit was held in the town hall at that place Oct. 21, 22 and 23, 1903. The first day was devoted to preparing and installing the exhibits of fruit, vegetables, etc., and for the second and third days the following program was prepared and in the main successfully carried out, the only drawback being the sudden illness of Professor Rane, which prevented his attendance and the unavoidable absence of President Gibbs. Mr. H. F. Hall, Assistant Horticulturist at Durham, very acceptably spoke of the work of the college in the Horticultural Department, in the absence of Professor Rane.

WEDNESDAY, OCT. 21.—FIRST DAY OF EXHIBIT.

THURSDAY, OCT. 22.—10 A. M.

Opening prayer—Rev. Mr. Alexander.

Address of welcome—Hon. Seth M. Richards, Newport.

Response for the Society—Pres. C. C. Shaw, Milford.

Address—Market Gardening for Local Markets, F. M. Tenney, Newport.

Discussion—C. A. Evans, Claremont; James Durward, Claremont; H. F. Hall, N. H. College, Durham.

Potato Culture—Burton A. Corbett.

1:30 P. M.

Remarks on Horticulture—Governor N. J. Bachelder.

The Agricultural College—President W. D. Gibbs, Durham.

Improved Methods of Orchard Management—Prof. F. A. Waugh, Amherst, Mass.

Practical Experience in Fruit Growing—R. H. Libbey, Newport, Maine.

Work of the Horticultural Department of the College and Station—Professor F. W. Rane, Durham.

EVENING, 7:30.

Music—Sullivan Grange.

Address—Forestry and Its Significance to New Hampshire, Philip W. Ayers, Concord.

Music—Sullivan Grange.

Illustrated Lecture on Forestry—Abel Daves, Ashland.
Discussion.

FRIDAY, OCT. 23.

9 A. M.

Apple Growing—A. J. Gould, Newport.

Why Are So Few Apples Grown in the State—John D. Ayer, Claremont.

Orchard Management—G. W. Parker, Wilton.

Short Fruit Talks—John F. Harvey, Pittsfield; J. E. Bachelder, Wilton; George F. Smith, Meredith; F. C. Gowing, Dublin, and many others.

1:30 P. M.

Insect Depredations—Prof. C. M. Weed, Durham.

Home Decoration—Leander Ashton, Senior Student, The N. H. College.

Report on the Exhibition.

Discussion—How Can We Make the Society More Useful in the State? Opened by President Shaw, followed by others.

One of the most pleasing features was the attendance of the school children of Newport, under the care of their superintendent and teachers, on the afternoon of the second day. Governor Bachelder gave a most excellent address and at its close gave a reception to the school children, and about 400 of them shook hands with His Excellency.

The officers of the society were under great obligations to Mr. Richards and the committees, and other members of Sullivan Grange, for the many courtesies extended to them and the assistance so willingly rendered in making the meeting one of the most successful ever held by the society. The exhibit of fruit, etc., was very fine considering that in nearly all sections of the state the fruit was destroyed by the early frosts, and the following premiums were awarded:

PREMIUMS AWARDED AT NEWPORT MEETING,

1903.

General Exhibit of Fruit, first, Charles A. Evans, Claremont.

General Exhibit of Autumn Apples, second, James Durward, Claremont.

General Exhibit of Autumn Apples, first, Charles A. Evans, Claremont.

General Exhibit of Winter Apples, first, James Durward, Claremont.

General Exhibit of Winter Apples, second, Charles A. Evans, Claremont.

Sweet Bough, first, H. B. Sanborn, E. Concord.

Red Astrachan, first, H. B. Sanborn, E. Concord.

Fameuse, first, James Durward, Claremont.

Fameuse, second, J. W. Sanders, Laconia.

Foundling, first, George F. Whitcomb, Claremont.

Gravenstein, first, J. W. Sanders, Laconia.

Gravenstein, second, James Durward, Claremont.

Holland Pippin, first, A. J. Gould, Newport.

Holland Pippin, second, James Durward, Claremont.

Maiden's Blush, first, A. J. Gould, Newport.

McIntosh Red, first, Charles A. Evans, Claremont.

McIntosh Red, second, H. B. Sanborn, E. Concord.

Porter, first, Charles A. Evans, Claremont.

Porter, second, J. W. Sanders, Laconia.

Twenty Ounce, first, C. C. Shaw, Milford.

Wealthy, first, Charles A. Evans, Claremont.

Wolf River, first, H. B. Sanborn, E. Concord.

Wolf River, second, Charles A. Evans, Claremont.

Fall Pippins, first, A. L. Merrill, Quincy.

Sweet Russett, second, Charles A. Evans, Claremont.

Baldwin, first, Henry Coffin, No. Boscawen.

- Baldwin, second, James Durward, Claremont.
 Ben Davis, first, Charles A. Evans, Claremont.
 Ben Davis, second, James Durward, Claremont.
 Danvers Sweet, first, C. C. Shaw, Milford.
 Esopus Spitzenburg, first, James Durward, Claremont.
 Esopus Spitzenburg, second, J. W. Sanders, Laconia.
 Fallawater, first, George F. Whitcomb, Claremont.
 Fallawater, second, James Durward, Claremont.
 Golden Pippin, first, A. M. Gove, Newport.
 Golden Russett, first, P. C. Kenney, Claremont.
 Golden Russet, second, H. B. Sanborn, E. Concord.
 Granite Beauty, first, Baxter Gay, New London.
 Black Gilliflower, first, P. C. Kinney, Claremont.
 Black Gilliflower, second, James Durward, Claremont.
 Jonathan, first, J. W. Sanders, Laconia.
 King, first, R. H. Morgan, Lempster.
 King, second, Charles A. Evans, Claremont.
 Mother, first, C. C. Shaw, Milford.
 Spy, first, James Durward, Claremont.
 Spy, second, Henry Coffin, No. Boscawen.
 Newtown Pippin, first, C. C. Shaw, Milford.
 Nodhead, first, W. E. Floyd, Weirs.
 Nodhead, second, J. W. Sanders, Laconia.
 Pewaukee, first, George F. Whitcomb, Claremont.
 Pewaukee, second, Charles A. Evans, Claremont.
 Peck's Pleasant, first W. E. Floyd, Weirs.
 Pound Sweet, first, P. C. Kinney, Claremont.
 Pound Sweet, second, H. B. Sanborn, E. Concord.
 Blue Pearmain, first, James Durward, Claremont.
 Blue Pearmain, second, A. M. Gove, Newport.
 R. I. Greening, first, A. L. Merrill, Quincy.
 R. I. Greening, second, James Durward, Claremont.
 Roxbury Russet, first, W. E. Floyd, Weirs.
 Roxbury Russet, second, A. M. Gove, Newport.
 Stark, first, James Durward, Claremont.
 Talman Sweet, first, George F. Whitcomb, Claremont.

- Talman Sweet, second, James Durward, Claremont.
Yellow Bellflower, first, Peter Peno, Claremont.
Yellow Bellflower, second, James Durward, Claremont.
Grimes' Golden, first, C. A. Evans, Claremont.
Arctic, second, P. C. Kinney, Claremont.
Crab Apples, first, C. C. Shaw, Milford.
Display of Pears, first, C. C. Shaw, Milford.
Beurre Bosc Pears, first, Charles A. Evans, Claremont.
Beurre Clargeau Pears, first, C. C. Shaw, Milford.
Beurre Deil Pears, first, H. B. Sanborn, E. Concord.
Beurre Deil Pears, second, C. C. Shaw, Milford.
Beurre d'Anjou Pears, first, H. B. Sanborn, E. Concord.
Beurre d'Anjou Pears, second, A. J. Gould, Newport.
Clapp's Favorite Pears, first, H. B. Sanborn, E. Concord.
Duchess Pears, first, H. B. Sanborn, E. Concord.
Flemish Beauty Pears, first, H. B. Sanborn, E. Concord.
Flemish Beauty Pears, second, Charles A. Evans, Claremont.
Lawrence Pears, first, C. C. Shaw, Milford.
Louise Bonne de Jersey Pears, first, A. J. Gould, Newport.
Louise Bonne de Jersey Pears, second, C. C. Shaw, Milford.
Mont Vernon Pears, first, A. J. Gould, Newport.
Onondaga Pears, first, James Durward, Claremont.
Seckel Pears, first, H. B. Sanborn, E. Concord.
Seckel Pears, second, C. C. Shaw, Milford.
Sheldon Pears, first, H. B. Sanborn, E. Concord.
Sheldon Pears, second, A. J. Gould, Newport.
Vicar Pears, first, C. C. Shaw, Milford.
Winter Nelis Pears, first, C. C. Shaw, Milford.
Souvenir du Congress Pears, first, H. B. Sanborn, E. Concord.
Keifer Hybrid Pears, second, Charles A. Evans, Claremont.

Kelsey Plums, first, H. B. Sanborn, E. Concord.

Isabella Grapes, first, Charles A. Evans, Claremont.

Champion Quinces, first, C. A. Evans, Claremont.

Oranges Quinces, first, P. C. Kenney, Claremont.

General Exhibit of Vegetables, first, James Durward, Claremont.

Display of Potatoes, first, James Durward, Claremont.

Early Rose Potatoes, first, H. M. Kimball, Newport.

Early Rose Potatoes, second, Charles A. Evans, Claremont.

Beauty of Hebron Potatoes, first, James Durward, Claremont.

Beauty of Hebron Potatoes, second, George F. Whitcomb, Claremont.

New Queen Potatoes, first, James Durward, Claremont.

New Queen Potatoes, second, H. B. Sanborn, E. Concord.

Fillbasket Potatoes, second, James Durward, Claremont.

Fillbasket Potatoes, first, H. M. Kimball, Newport.

Burbank Potatoes, first, James Durward, Claremont.

Enormous Potatoes, first, James Durward, Claremont.

Green Mountain Potatoes, first, H. B. Sanborn, E. Concord.

Egyptian Beets, first, James Durward, Claremont.

Eclipse Beets, first, James Durward, Claremont.

Edmund Beets, first, James Durward, Claremont.

Mangel Wurtzel, first, James Durward, Claremont.

Sugar Beets, first, James Durward, Claremont.

All Seasons Cabbage, first, Wm. F. Newton, Newport.

Flat Dutch Cabbage, first, Fred Kitchen, Newport.

Flat Dutch Cabbage, second, James Durward, Claremont.

Brunswick Cabbage, first, James Durward, Claremont.

Red Cabbage, first, James Durward, Claremont.

Drumhead Cabbage, first, James Durward, Claremont.

Savoy Cabbage, first, James Durward, Claremont.

Stone Mason Cabbage, first, James Durward, Claremont.

Winningstadt Cabbage, first, James Durward, Claremont.

Danvers Carrots, first, James Durward, Claremont.

Long Orange Carrots, first, James Durward, Claremont.

Short Horn Carrots, first, James Durward, Claremont.

Cauliflower, first, James Durward, Claremont.

Boston Market Celery, first, James Durward, Claremont.

White Plum Celery, first, James Durward, Claremont.

Twelve Rowed Corn, first, George F. Whitney, Newport.

Twelve Rowed Corn, second, James Durward, Claremont.

Sweet Corn, first, F. J. Tenney, Newport.

Sweet Corn, second, James Durward, Claremont.

Imp. Y. E. Beans, first, C. A. Evans, Claremont.

Imp. Y. E. Beans, second, James Durward, Claremont.

Rye, first, Charles A. Evans, Claremont.

Barley, first, Charles A. Evans, Claremont.

Buckwheat, first, Charles A. Evans, Claremont.

Eartiana Tomatoes, first, P. C. Kenney, Claremont.

Noltes Earliest Tomatoes, first, F. J. Tenney, Newport.

Red Onions, first, W. F. Newton, Newport.

Red Onions, second, James Durward, Claremont.

Silver Onions, first, James Durward, Claremont.

Silver Onions, second, W. F. Newton, Newport.

Yellow Onions, first, W. F. Newton, Newport.

Yellow Onions, second, James Durward, Claremont.

Hollow Crown Parsnips, first, James Durward, Claremont.

Long White Parsnips, first, James Durward, Claremont.

Large Dutch Parsnips, first, James Durward, Claremont.

Field Pumpkins, first, James Durward, Claremont.
 Sugar Pumpkins, first, James Durward, Claremont.
 Sugar Pumpkins, second, J. C. Spooner, Newport.
 Hubbard Squashes, first, R. S. Dudley, Newport.
 Hubbard Squashes, second, George A. Gove, Newport.
 Marblehead Squashes, first, W. F. Newton, Newport.
 Marblehead Squashes, second, James Durward, Clare-

mont.

Bay State Squashes, first, James Durward, Claremont.
 Marrow Squashes, first, James Durward, Claremont.
 Turban Squashes, first, James Durward, Claremont.
 Perfect Gem Squashes, first, James Durward, Clare-

mont.

Fordhook Squashes, first, James Durward, Claremont.
 Faxon Squashes, first, James Durward, Claremont.
 Golden Bronze Squashes, second, James Durward,

Claremont.

Delicious Squashes, first, F. J. Tenney, Newport.
 English Turnips, first, James Durward, Claremont.
 White Swede Turnips, first, James Durward, Claremont.
 Yellow Swede Turnips, first, James Durward, Clare-

mont.

Purple Top Turnips, first, James Durward, Claremont.
 General Exhibit of Flowers, first, James Durward,

Claremont.

General Exhibit of Plants, first, Mrs. F. E. Follansbee, Newport.

General Exhibit of Plants, second, Mrs. George Watts, Newport.

General Exhibit of Plants, third, Mrs. Marshall, Newport, Mrs. Wright, Newport.

Rex Begonia, first, Mrs. Wm. Tenney, Newport.
 Geranium, first, Mrs. George A. Gove, Newport.
 Palm, first, Mrs. E. E. Lear, Newport.
 Dahlias, first, Mrs. George W. Hurd, Newport.
 Dahlias, second, Mrs. A. Q. Evans, Newport.

Sweet Peas, first, Mrs. Peabody, Newport.

Sweet Peas, second, James Durward, Claremont.

Pansies, first, Mrs. R. S. Dudley, Newport.

Cut Flowers, first, Mrs. B. F. Carr, Newport.

Exhibit of Canned Fruit, first, Mrs. C. A. Evans, Claremont.

Canned Peaches, first, Mrs. C. A. Evans, Claremont.

Canned Apples, first, Mrs. C. A. Evans, Claremont.

Canned Plums, first, Mrs. C. A. Evans, Claremont.

Canned Pears, first, Mrs. C. A. Evans, Claremont.

Canned Pears, second, Mrs. R. S. Dudley, Newport.

Canned Strawberries, first, Mrs. C. A. Evans, Claremont.

Canned Blueberries, first, Mrs. C. A. Evans, Claremont.

Canned Raspberries, first, Mrs. C. A. Evans, Claremont.

Canned Raspberries, second, Mrs. R. S. Dudley, Newport.

Canned Cherries, first, Mrs. C. A. Evans, Claremont.

Canned Tomatoes, first, Mrs. C. A. Evans, Claremont.

Canned Blackberries, first, Mrs. C. A. Evans, Claremont.

Canned Gooseberries, first, Mrs. C. A. Evans, Claremont.

Canned Currants, first, Mrs. C. A. Evans, Claremont.

Canned Rhubarb, first, Mrs. C. A. Evans, Claremont.

Piccalilli, first, Mrs. C. A. Evans, Claremont.

Tomato Catsup, first, Mrs. C. A. Evans, Claremont.

Exhibit Jellies, first, Mrs. C. A. Evans, Claremont.

Apple Jelly, first, Mrs. C. A. Evans, Claremont.

Crab Apple Jelly, first, Mrs. C. A. Evans, Claremont.

Grape Jelly, first, Mrs. C. A. Evans, Claremont.

Currant Jelly, first, Mrs. C. A. Evans, Claremont.

Blackberry Jelly, first, Mrs. C. A. Evans, Claremont.

Raspberry Jelly, first, Mrs. C. A. Evans, Claremont.

Apple Jelly second, Mrs. R. S. Dudley, Newport.

OFFICERS FOR 1904.

President, C. C. SHAW, Milford.

Vice President, JOHN T. HARVEY, Pittsfield.

Secretary, W. D. BAKER, Quincy.

Treasurer, T. E. HUNT, Lakeport.

EXECUTIVE COMMITTEE.

F. WM. RANE, Durham.

GEORGE F. SMITH, Meredith.

W. H. STINSON, Dunbarton.

DIRECTORS.

George F. Beede, Fremont; Robert Miller, Madbury;
George F. Smith, Meredith; George E. Gridley, Wolfe-
borough; R. D. Bartlett, Pittsfield; Charles W. Hoitt,
Nashua; D. C. Stearns, Winchester; George F. Whit-
comb, Claremont; E. Bertram Pike, Pike; B. A. Corbett,
Colebrook.

POMOLOGIST.

Prof. F. Wm. Rane, Durham.

MYCOLOGIST.

Dr. H. H. Lamson, Plymouth.

ENTOMOLOGIST.

Prof. C. M. Weed, Durham.

The Tenth annual exhibit was held at Armory Hall, in
the City of Keene, Nov. 15, 16 and 17, 1904. The first day

was devoted as usual to receiving and installing the exhibits, while the second and third days were mainly taken up with meetings at which the following program was carried out :

TUESDAY, NOV. 15.

First day of exhibit.

WEDNESDAY, NOV. 16.

10 A. M.

Opening Prayer.

Address of Welcome—Hon. J. S. Taft, Mayor of Keene.

Response for Society—Pres. C. C. Shaw.

Address—Principles for Successful Horticultural Work, C. A. Evans, Claremont.

Discussion—E. B. Parker, Wilton; John T. Harvey, Pittsfield, and others.

Condition of Apple Growing in New Hampshire—Fred S. Putney, N. H. College, Durham.

1:30 P. M.

Pear Diseases and Their Remedies, Arthur G. Dunn, N. H. College, Durham.

Growing and Buying Nursery Stock—Prof. George O. Greene, Mass. Agricultural College.

Horticultural Reminiscences—O. B. Hadwen, Worcester, Mass.

EVENING, 7:30.

Music—Cheshire Grange.

Illustrated Address—New Hampshire Out-of-Doors, George H. Moses, Concord, N. H.

Music—Cheshire Grange.

Address—Horticulture at the New Hampshire College,
Prof. F. Wm. Rane, Durham.

THURSDAY, NOV. 17.

9 A. M.

How the Strawberry Can Be Made a Profitable Crop in
New Hampshire—Harold N. Knight, N. H. College, Dur-
ham.

Orchard Management—G. W. Parker, Wilton.

Packing Fruit for Market—W. D. Baker, Quincy.

1:30 P. M.

New Hampshire Horticulture—Prof. F. W. Rane.

Report of the Fruit Exhibit—O. B. Hadwen, Pres. Mass.
Horticultural Society.

Discussion—How Can We Make the Horticultural So-
ciety More Useful in the State? Opened by President
Shaw, followed by others.

The meeting was very successful, the exhibit being large
and of most excellent quality, and the attendance larger
than at any previous meeting. The subjects were present-
ed by the speakers in a most effective and instructive man-
ner and the time that could be allowed for discussions of the
various topics was far too short to allow as many to take
part as desired, and it is greatly to be regretted that the
very limited funds at the disposal of the society will not
permit of having these addresses, papers and discussions
collected and published in a report so that the valuable
and instructive information contained in them could be
placed before the many of our fruit growers who were not
present at the meetings. The following is the list of prem-
iums awarded:

KEENE EXHIBIT, 1904.

General Exhibit of Fruit, first, Charles A. Evans, Claremont.

APPLES.

General exhibit of summer apples, first Harry B. Sanborn, East Concord.

General exhibit of fall apples, first, C. A. Evans, Claremont; second, W. D. Baker, Quincy; third, Harry B. Sanborn, East Concord.

General exhibit of winter apples, first, W. D. Baker, Quincy; second, C. A. Evans, Claremont; third, Harry B. Sanborn, East Concord.

Strawberry apples, first, W. D. Baker, Quincy.

Sweet Bough, first, Harry B. Sanborn, E. Concord.

August Sweet, first, Harry B. Sanborn, E. Concord.

Peach Apple, second, Harry B. Sanborn, E. Concord.

Alexander, first, Charles A. Evans, Claremont.

Autumn Strawberry, first, Harry B. Sanborn; second, W. D. Baker.

Fameuse, first, John T. Harvey, Pittsfield; second, Harry B. Sanborn, E. Concord.

Gravenstein, first, Harry B. Sanborn, E. Concord; second, Charles A. Evans, Claremont.

Maiden's Blush, first, C. C. Shaw.

McIntosh Red, first, Harry B. Sanborn; second, Charles A. Evans.

Porter, first, Harry B. Sanborn; second, C. C. Shaw.

Wealthy, first, Harry B. Sanborn; second, Charles A. Evans.

Wolf River, first, Charles A. Evans; second, E. P. Amedon, E. Westmoreland.

Fall Greening, first, Harry B. Sanborn.

Fall Pippin, second, A. W. Davis, Keene.

Baldwins, first, Harry B. Sanborn ; second, John T. Harvey.

Ben Davis, first, E. P. Amidon.

Colvert, first, J. P. Wallace, Quincy ; second, W. D. Baker.

Danvers Sweet, first, C. C. Shaw.

Esopus Spitzenburg, first, John T. Harvey ; second, Charles A. Evans.

Fallwater, first, John T. Harvey.

Golden Russet, first, Charles A. Evans ; second, S. B. Wilder, Surry.

Black Gilliflower, first, John T. Harvey ; second, Charles A. Evans.

Hubbardston, first, W. D. Baker ; second, John T. Harvey.

Hunt Russet, first, W. D. Baker.

King, first, Miss H. A. Harris, Quincy ; second, Harry B. Sanborn.

Mann, first, Harry B. Sanborn.

Mother, first, Wm. H. Rogers, Quincy ; second, C. C. Shaw.

Spy, first, J. P. Wallace, Quincy ; second, Harry B. Sanborn.

Newtown Pippins, first, C. C. Shaw.

Nodhead, first, W. D. Baker ; second, John T. Harvey.

Pewaukee, first, Charles A. Evans ; second, Harry B. Sanborn.

Peck's Pleasant, first, Charles A. Evans.

Pound Sweet, first, Harry B. Sanborn ; second, H. A. Davis, Keene.

Blue Pearmain, first, John T. Harvey ; second, Sidney B. Wilder.

R. I. Greenings, first, John T. Harvey ; second, W. D. Baker.

Roxbury Russet, first, John T. Harvey ; second, Charles A. Evans.

Stark, first, W. D. Baker ; second, E. A. Jones, Marlow.
Talman's Sweet, first, John T. Harvey ; second, W. D. Baker.

Yellow Bellflower, first, Charles A. Evans ; second, John T. Harvey.

Bethel, second, E. P. Amidon.

Red Canada, first, W. D. Baker.

Crab Apples, first, C. C. Shaw.

PEARS AND GRAPES.

Beurre Bosc, first, Charles A. Evans.

Beurre Deil, first, Harry B. Sanborn ; second, C. C. Shaw,

Beurre d'Anjou, first, H. A. Davis ; second, Harry B. Sanborn.

Clapp's Favorite, first, Harry B. Sanborn.

Lawrence, first, C. C. Shaw.

Seckel, first, Harry B. Sanborn.

Vicar, first, C. C. Shaw.

Souvenir du Congress, first, Harry B. Sanborn.

Fulton, second, C. C. Shaw.

Concord Grapes, first, Harry B. Sanborn.

VEGETABLES.

Display of potatoes, first, Floyd N. Rugg, Alstead.

Early Rose, first, Harry B. Sanborn ; second, C. A. Evans.

Beauty of Hebron, first, C. A. Evans.

New Queen, first, C. A. Evans ; second, Harry B. Sanborn.

Pearl of Savoy, first, Charles A. Evans ; second, H. A. Davis.

Green Mountain, first, Harry B. Sanborn.

Early Northern, second, S. J. Wilder.

Burbank Seedling, first, E. P. Amidon.

Egyptian beets, first, C. A. Evans; second, M. E. Starkey, Keene.

Eclipse, first, C. A. Evans.

Edmunds, first, C. A. Evans.

Sugar, first, C. A. Evans.

Mangel Wurtzel, first M. E. Starkey; second, C. A. Evans.

Flat Dutch cabbage, first, M. E. Starkey; second, C. A. Evans.

Red cabbage, first, C. A. Evans; second, M. E. Starkey.

Winnistadt cabbage, first, C. A. Evans; second, M. E. Starkey.

All Seasons cabbage, first, C. A. Evans.

Fottler's cabbage, first, C. A. Evans.

Drumhead cabbage, first, C. A. Evans.

Stone Mason cabbage, first, C. A. Evans.

Short Horn carrots, first, M. E. Starkey; second, C. A. Evans.

Danvers carrots, first, C. A. Evans.

Cauliflower, first, C. A. Evans.

Salsify, first, M. E. Starkey.

Eight rowed corn, first, Floyd N. Rugg, Alstead; second, H. A. Davis.

Golden Bantam Sweet corn, first, H. I. Wyman, Keene.

Evergreen Sweet corn, first, N. R. Towne, Keene.

Pop corn, first, S. C. Ellis; second, H. I. Wyman.

Imp. Y. E. beans, first, Harry S. Hayward, Keene; second, C. A. Evans.

Boston Favorite, first, C. A. Evans.

Cranberry, first, C. A. Evans.

Pea beans, first, C. A. Evans.

Golden Wax beans, first, S. C. Ellis.

Field peas, first, C. A. Evans.

Rye, first, C. A. Evans.

Barley, first, C. A. Evans.

Buckwheat, first, C. A. Evans.

Long Green cucumbers, first, M. E. Starkey.

Kohl Rabi, first, C. A. Evans; second, M. E. Starkey.

Citron, first, C. A. Evans.

Prizetaker onions, first, N. R. Towne, Keene.

Yellow Danvers onions, first, C. A. Evans; second, M. E. Starkey.

Red onions, second, M. E. Starkey.

Hollow Crown parsnips, first, C. A. Evans; second, M. E. Starkey.

Long White parsnips, first, C. A. Evans.

Field pumpkins, first, C. P. Pitcher; second, M. E. Starkey.

Sugar pumpkins, first, John W. Nye, Keene; second, C. P. Pitcher.

Boston Marrow squashes, first, H. L. Fisher; second, M. E. Starkey.

Hubbard squashes, first, S. C. Ellis, Keene; second, Henry I. Wyman, Keene.

Faxon, first, M. E. Starkey.

Perfect Gem squash, first, C. A. Evans.

Fordhook squash, first, C. A. Evans.

Turban squash, first, H. A. Davis, Keene.

White Swede turnips, first, S. C. Ellis, Keene.

CANNED FRUITS, ETC.

Display of canned fruit, first, Mrs. C. A. Evans, Claremont.

Canned peaches, first, Mrs. C. A. Evans; second, Mrs. Sarah M. Harvey, Keene.

Canned plums, first, Mrs. C. A. Evans,

Canned pears, first, Mrs. C. A. Evans; second, Sarah M. Harvey.

Canned strawberries, first, C. A. Evans.

Canned blueberries, first, C. A. Evans.

Canned raspberries, first, Mrs. C. A. Evans; second, Mrs. Sarah M. Harvey.

Canned chimes, first, Mrs. C. A. Evans.

Canned tomatoes, first, Mrs. C. A. Evans; second, Mrs. Sarah M. Harvey.

Canned blackberries, first, Mrs. C. A. Evans.

Canned gooseberries, first, Mrs. C. A. Evans.

Canned currants, first, Mrs. C. A. Evans.

Canned rhubarb, first, Mrs. C. A. Evans.

General exhibit, jellies, &c., first, Mrs. C. A. Evans.

Apple jelly, first, Mrs. C. A. Evans.

Crab Apple jelly, first, Mrs. C. A. Evans.

Grape jelly, first, Mrs. C. A. Evans.

Currant jelly, first, Mrs. C. A. Evans; second, Mrs. Sarah M. Harvey.

Blackberry jelly, first, Mrs. C. A. Evans.

Raspberry jelly, first, Mrs. C. A. Evans.

Cucumber pickles, first, Mrs. C. A. Evans; second, Mrs. Sarah M. Harvey.

Piccalilli, first, Mrs. C. A. Evans.

Sweet pickles, first, Mrs. C. A. Evans.

Tomato catsup, first, Mrs. Grace M. Hadley, Keene; second, Mrs. C. A. Evans.

Display of potted plants, first, Ellis Bros., Keene.

Display of flowers, first, Ellis Bros., Keene.

Chrysanthemums, first, F. Wm. Rane, Durham.

Otaheite orange tree, first, Mrs. A. O. Emerson, Keene.

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TWENTY-SEVENTH REPORT

OF THE

BOARD OF TRUSTEES

OF THE

NEW HAMPSHIRE COLLEGE

OF

AGRICULTURE AND THE MECHANIC ARTS

DURHAM, NEW HAMPSHIRE

TO THE

NEW HAMPSHIRE LEGISLATURE

NOVEMBER 1, 1904

PRINTED AND BOUND BY RUMFORD PRINTING CO., CONCORD.

TWENTY-SEVENTH REPORT OF THE BOARD OF
TRUSTEES OF THE NEW HAMPSHIRE COLLEGE
OF AGRICULTURE AND THE MECHANIC ARTS
FOR THE TWO YEARS ENDING JUNE 30, 1904.

*To His Excellency the Governor and the Honorable Senate
and House of Representatives of New Hampshire:*

DURHAM, N. H., November 1, 1904.

I have the honor of transmitting herewith the report of
the New Hampshire College of Agriculture and the Me-
chanic Arts for the two years ending June 30, 1904.

Yours respectfully,

NAHUM J. BACHELDER,
President of the Board of Trustees.

REPORT OF THE PRESIDENT.

DURHAM, N. H., November 1, 1904.

Hon. Nahum J. Bachelder, President of the Board of Trustees.

SIR: This biennial report contains the following:

First. Detailed statements as to the financial condition and transactions of the college from July 1, 1902, to June 30, 1904, including the annual reports submitted to the United States government, covering the administration of the Morrill fund of \$25,000 and the Hatch fund of \$15,000 annually appropriated to the college. All financial reports have been audited by the college auditor and approved by the board of trustees. In addition, all reports of funds appropriated by the United States government have been approved by government officials designated for that purpose.

Second. A full description of the courses of study offered by the college, together with lists of instructors, students and alumni.

Third. The fifteenth annual report of the Agricultural Experiment Station, covering the fiscal year July 1, 1902, to June 30, 1903, and the work of the station from November 1, 1902, to November 1, 1903.

Fourth. The sixteenth annual report of the Agricultural Experiment Station, covering the fiscal year July 1, 1903, to June 30, 1904, and the work of the station from November 1, 1903, to November 1, 1904.

Fifth. The appendix containing the addresses delivered at the exercises connected with the inauguration of the president and the dedication of Morrill Hall October 28, 1903.

MATERIAL EQUIPMENT.

With the completion and equipment of Morrill Hall and the new range of greenhouses great strength has been given to the working efficiency of the agricultural department. A much higher grade of instruction can now be given in theoretical and practical agriculture and horticulture than was possible before the new buildings were completed. During the past year the college herd has been improved by selling off a large number of inferior animals and replacing them with typical specimens of several of the leading breeds. The herd now contains good representatives of Jersey, Guernsey, Ayrshire and Short Horn cattle. We have also purchased within the past year five head of pure bred Southdowns—four ewes and one ram, also two pure bred Berkshire sows and a Berkshire boar.

The mechanical engineering department has recently added a 12-h. p. Olds gasoline engine with complete indicator and testing apparatus; also a new speed lathe which was made in the machine shops. Other smaller pieces of apparatus have been added as the limited funds would permit.

The electrical engineering department has recently added a General Electric 15-h. p. direct current motor and considerable smaller apparatus for measuring, testing, calibrating, etc.

Equipment has been added in all departments as freely as the funds would permit.

CURRICULUM.

The names of the courses of study offered by the college remain the same as in the last biennial report although many changes have been made to strengthen and modernize them. The agricultural courses, which have been completely reorganized and systematized within the past year, now conform with the practice in the best agricultural colleges of the country.

The establishment of a department of English and Phi-

losophy, with a competent man at its head, devoting his entire time to the subject, has added material strength to a most important branch of our work.

Our entrance requirements have been broadened and made more elastic by allowing more electives than formerly. Thus we maintain our standard of admission but at the same time allow the candidate greater choice of subjects.

SCHOLARSHIPS.

GRANGE SCHOLARSHIPS.—At the meeting of the board of trustees held in January, 1904, it was voted that “beginning with the opening of the college year, September 7, 1904, each subordinate and Pomona grange in New Hampshire shall have the privilege of appointing one student annually to a free scholarship in any of the four-year or two-year courses in the college. Each appointment to be good for four years if in a four years’ course, or for two years if in a two years’ course. Students holding these scholarships to be relieved from paying the annual tuition fee of sixty dollars but not to be relieved from payment of incidental or other fees. Scholarships may be forfeited at any time by misconduct of the student or by his failure in a sufficient number of studies or by his inability to meet the entrance requirements. Women may hold these scholarships on the same terms as men. The method of appointment to be entirely at the option of the grange; it may be by election, competitive examination or otherwise.”

STATE FEDERATION OF WOMEN’S CLUBS SCHOLARSHIPS.—At the October, 1904, meeting of the board of trustees it was voted that five scholarships be given annually to the New Hampshire State Federation of Women’s Clubs on the same conditions as the grange scholarships are given to the granges.

GIFTS.

THE PILLSBURY FUND.—Through the generosity of the Hon. R. W. Pillsbury of Londonderry a fund has been

given the college, the income of which shall be used to assist worthy students from the town of Londonderry.

THE POTTER COLLECTION.—Mrs. Harriet W. Potter has generously given the college an important collection of anatomical specimens, prepared by the late Dr. Frederick E. Potter of Portsmouth, N. H.

FACULTY.

Mr. Frederick W. Taylor, B. S., a graduate of the four years' course in agriculture at Ohio State University and later soil expert with the Bureau of Soils, United States Department of Agriculture, entered upon his duties as professor of agriculture, September 1, 1903.

Mr. E. L. Shaw, B. S., also a graduate of the four years' course in agriculture at Ohio State University and later assistant in animal husbandry at the University of Missouri, took up his work with us September 1, 1903, as assistant professor of agriculture. With these two men at the head of the agricultural work in college and station, one to specialize in soils and crops and the other in animal husbandry, we are already accomplishing splendid results.

Mr. E. R. Groves, A. B., B. D., a graduate of Dartmouth College and of Yale Divinity School, was placed at the head of the department of English and Philosophy September 1, 1903. Under his direction these important subjects are being steadily developed. His thorough work in English is of special value to all of our students.

Mr. E. D. Sanderson, M. S., has been elected to the professorship of entomology and zoölogy and made entomologist to the Experiment Station and state entomologist in place of Prof. C. M. Weed, who resigned September 1 to take a position in the Lowell, Mass., Normal School. Mr. Sanderson is a graduate of the Michigan Agricultural College and of Cornell University. He was state entomologist of Texas and professor of entomology in the Texas Agricultural and Mechanical College at the time of his election to

this position. The college is particularly fortunate in securing his services.

NEEDS OF THE COLLEGE.

INCREASED MONEY FOR RUNNING EXPENSES.—We must not lose sight of the fact that the institution is growing; that a number of buildings have been added recently and that it costs more to heat, light, janitor and keep the buildings in repair now than it did formerly when there were fewer of them. Also our number of students is increasing rapidly. At this writing, November 1, we have 75 new students registered, compared with 50 one year ago. Increase in students and buildings calls for increased facilities for instruction; more teachers, larger and better equipped laboratories, shops, libraries and drawing rooms. The teaching of agriculture and engineering and all technical or industrial subjects in a modern efficient way is very expensive. It costs comparatively little to equip for teaching languages or mathematics. Besides the teacher, a classroom with a few settees, a flat top desk and a blackboard are all that is needed, while for teaching agriculture or engineering in an efficient way large expenditures are necessary for live stock, implements, boilers, engines of many kinds, testing apparatus, dynamos, motors, etc.

Probably the greatest need of the college is increased appropriations for running expenses, to enable us to properly equip, janitor, repair, heat and light our buildings and to add much needed facilities for instruction. The college has grown to such an extent that it is no longer possible to carry on the college work as it should be carried on with the present income. The Legislature should without fail add at least \$5,000 to the usual biennial appropriation of “\$15,000 for the short course and running expenses” for the reasons above stated.

DRILL HALL AND GYMNASIUM.—The college is required by congressional act to give instruction in military science and military drill. To assist the college in this work the

government loans us guns, sabres, swords and other army accoutrement. At the present time we have no suitable rooms in which to store this material. Furthermore, we have no hall large enough for indoor drill during the winter months and neither class room nor office for the professor of military science who is detailed from the United States Army without cost to the college. This utter lack of facilities for instruction in military science has been the cause of frequent sharp criticisms from the war department. At present, and largely for the above reason, no officer is detailed at the college.

The college is also badly in need of a gymnasium where students may be required to take physical training. This would be of most value during the winter months when they cannot take part in outdoor forms of exercise. All of the leading colleges of the world recognize the necessity of the gymnasium. At the present time practically every college in New England except our own has a gymnasium.

Further: the only audience room in the college is now used for chapel, mass meetings, military drill, basket ball, college socials, fraternity parties and commencement exercises. Obviously one room cannot be adapted to such a variety of uses.

With a combined drill hall and gymnasium the college would have adequate store rooms for military supplies, class rooms and offices for military instructor, and also floor space for military drill and gymnasium. This would permit the present audience room to be suitably fitted and furnished for the daily chapel exercises and for college lectures and similar gatherings. The college is, therefore, in urgent need of a drill hall and gymnasium. At least \$25,000 would be required to erect a suitable building. Through the activity of our students and alumni a fund of \$1,500 has already been raised by private subscription for this purpose. Probably the committee having this fund in charge would be willing to apply it on equipment if the state will appropriate money for the building.

PRESIDENT'S HOUSE.—On September 20, 1903, the president's residence was destroyed by fire, the origin of which is unknown. Not having college funds available for rebuilding but desiring that a suitable house be built for the president, the trustees accepted the offer of Walter M. Parker of Manchester to build such a house as the board of trustees directed, at his own private expense, with the agreement that the college should have the privilege of buying it at the actual cost price at any time it desired to do so by paying four per cent. interest on the money invested and keeping up insurance and repairs. It is desirable that the college buy the house at the earliest opportunity. An appropriation from the Legislature of about \$5,500 would be necessary for this purpose.

COLLEGE INDEBTEDNESS.—Upon assuming the duties of president September 1, 1903, I found the college* indebtedness to be over \$17,000. It is highly desirable that the Legislature appropriate money for the purpose of paying off this debt and stopping the accumulation of interest. It is equally desirable and necessary that no deficit in college funds be allowed to occur again. I may say in this connection that for the fiscal year, which closed June 30, 1904, the college carried over a small unexpended balance.

WOMAN'S BUILDING.—Since ours is the only college in the state which opens its doors to women, it is imperative that provision be made for their training. At present we offer them a general course, consisting of culture and science studies in which no technical work is given. The college does not recognize the important vocation of home keeping, in which probably nine tenths of all our young women will engage sooner or later. This is the most important of the vocations since it directly affects the lives of all people. I regard it, therefore, as the duty of the college to provide, at the earliest possible date, a department of domestic science in which young women may receive instruction in the science, art and economics of home keeping.

* On June 30, 1903, the total indebtedness was \$17,100.00.

But before such a department can be established and, in fact, before we can seriously encourage young women to take any of our courses of study, we must provide a suitable place for them to live. Our arrangements in this respect are most unsatisfactory. We are compelled to rely upon a few private families in the village to furnish rooms and board for all of our students except those who live in fraternities or clubs. This method of living is especially undesirable for young women students. The college is therefore in great need of a suitable building to be used as a woman's hall.

CREAMERY BUILDING.—The creamery building has served a useful purpose but it is no longer adequate to accommodate the needs of modern instruction in creamery management. It is imperative that a new building be provided at an early date if efficient instruction is to be maintained in this department of college work.

TREASURER'S GOVERNMENT REPORT.

Name of Institution, THE NEW HAMPSHIRE COLLEGE OF
AGRICULTURE AND THE MECHANIC ARTS.

Post-office, DURHAM; *State,* NEW HAMPSHIRE.

Report of treasurer of said institution, to the Secretary of Agriculture and the Secretary of the Interior, of amount received under act of congress of August 30, 1890, in aid of colleges of agriculture and the mechanic arts, and of the disbursements thereof, to and including June 30, 1903.

RECEIPTS.

Received from the United States government . \$25,000.00

DISBURSEMENTS.

Disbursed for instruction and facilities:

In agriculture, as per schedule A . . .	\$4,219.05
In mechanic arts, as per schedule B . . .	6,635.39
In English language, as per schedule C . . .	3,554.23
In mathematical science, as per schedule D . . .	1,911.59
In natural and physical sciences, as per schedule E	6,354.35
In economic science, as per schedule F . . .	2,325.39

Total expended during year . . . \$25,000.00

I hereby certify that the above account is correct and true, and, together with the schedules hereunto attached, truly represents the details of expenditures for the period and by the institution named, and that said expenditures were only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathe-

matical, physical, natural, and economic science, with special reference to their application in the industries of life, and to the facilities for such instruction, according to my best knowledge and belief.

(Signed)

WALTER M. PARKER,
Treasurer.

SCHEDULE A.—*Disbursements for instruction in Agriculture, and for facilities for such instruction, during the year ended June 30, 1903.*

I. For instruction, viz.:

For the salaries of (1) Professor of Agriculture,	
\$249.99; (2) Professor of Agricultural	
Chemistry, \$541.58; (3) Professor of Hor-	
ticulture and Forestry, \$541.58; (4) In-	
structors in Agriculture and Horticulture,	
\$1,227.18; (5) Instructors in Dairying,	
\$1,474.19	\$4,034.52

II. For facilities, as follows:

For apparatus, stock, and materials	56.46
For text-books and reference books	128.07
<hr/>	
Total	\$4,219.05

SCHEDULE B.—*Disbursements for instruction in Mechanic Arts, and for facilities for such instruction, during the year ended June 30, 1903.*

I. For instruction, viz.:

For the salaries of (1) Professor of Mechanical	
Engineering, \$2,092.03; (2) Professor of	
Electrical Engineering, \$704.09; (3) Pro-	
fessor of Drawing, \$1,526.27; (4), Instruc-	
tor in Machine Work, \$1,083.29; (5), In-	
structor in Wood-work, \$1,097.37	\$6,503.05

II. For facilities, as follows:

Apparatus, machinery, stock, and material	\$22.83
For text-books and reference books	109.51

Total	\$6,635.39
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SCHEDULE C.—*Disbursements for instruction in English Language, and for facilities for such instruction, during the year ended June 30, 1903.*

I. For instruction, viz.:

For the salaries of Instructors in English Language	\$3,356.66
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II. For facilities, as follows:

For text-books and reference books	197.57
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Total	\$3,554.23
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SCHEDULE D.—*Disbursements for instruction in Mathematical Science, and for facilities for such instruction, during the year ended June 30, 1903.*

I. For instruction, viz.:

For the salary of the Professor of Mathematics	\$1,841.59
For the salary of Instructors in Mathematics	59.00

II. For facilities, as follows:

For text-books and reference books	11.00
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Total	\$1,911.59
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SCHEDULE E.—*Disbursements for instruction in Physical Science, and for facilities for such instruction, during the year ended June 30, 1903.*

I. For instruction, viz.:

For the salaries of (1) Professor of Physics, \$704.20; (2) Professor of Chemistry, \$2,166.58; (3) Instructors in Chemistry, \$862.43	\$3,733.21
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II. For facilities, as follows:

For text-books and reference books	\$398.08
Total	\$4,131.29

SCHEDULE E (2).—*Disbursements for instruction in Natural Science, and for facilities for such instruction, during the year ended June 30, 1903.*

I. For instruction, viz.:

For salary of Professor of Entomology and Zoölogy	\$1,625.00
For salary of Professor of Botany and Bacteriology	520.00

II. For facilities, as follows:

For text-books and reference books	78.06
Total	\$2,223.06

SCHEDULE F.—*Disbursements for instruction in Economic Science, and for facilities for such instruction, during the year ended June 30, 1903.*

I. For instruction, viz.:

For Professor of Economic Science and History	\$2,166.58
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II. For facilities, as follows:

For text-books and reference books	158.81
Total	\$2,325.39

TREASURER'S GOVERNMENT REPORT.

Name of Institution, THE NEW HAMPSHIRE COLLEGE OF
AGRICULTURE AND THE MECHANIC ARTS.

Post-office, DURHAM; *State,* NEW HAMPSHIRE.

Report of treasurer of said institution, to the Secretary of Agriculture and the Secretary of the Interior, of amount received under act of congress of August 30, 1890, in aid of colleges of agriculture and the mechanic arts, and of the disbursements thereof, to and including June 30, 1904.

RECEIPTS.

Received from the United States government . \$25,000.00

DISBURSEMENTS.

Disbursed for instruction and facilities:

In agriculture, as per schedule A	\$4,643.38
In mechanic arts, as per schedule B	8,050.74
In English language, as per schedule C	933.31
In mathematical science, as per schedule D	2,148.20
In natural and physical sciences, as per schedule	
E	7,124.77
In economic science, as per schedule F	2,099.60
	\$25,000.00

I hereby certify that the above account is correct and true, and, together with the schedules hereunto attached, truly represents the details of expenditures for the period and by the institution named, and that said expenditures were only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathe-

matical, physical, natural, and economic science, with special reference to their application in the industries of life, and to the facilities for such instruction, according to my best knowledge and belief.

(Signed)

WALTER M. PARKER,
Treasurer.

SCHEDULE A.—*Disbursements for instruction in Agriculture, and for facilities for such instruction, during the year ended June 30, 1904.*

I. For instruction, viz.:

For the salaries of (1) Professor of Agriculture, \$666.62; (2) Professor of Agricultural Chemistry, \$499.96; (3) Assistant Professor of Agriculture, \$500; (4) Professor of Horticulture and Forestry, \$499.96; (5) Instructor in Horticulture, \$249.96; (6) Instructor in Dairying, \$967.44 . . . \$3,383.94

II. For facilities, as follows:

For apparatus	1,001.66
For text-books and reference books	257.78
	<hr/>
Total	\$4,643.38

SCHEDULE B.—*Disbursements for instruction in Mechanic Arts and for facilities for such instruction, during the year ended June 30, 1904.*

I. For instruction, viz.:

For the salaries of (1) Professor of Mechanical Engineering, \$2,000; (2) Instructor in Machine Work, \$1,000; (3) Instructor in Wood-work, \$1,000; (4) Professor of Drawing, \$1,400; (5) Professor of Electrical Engineering, \$750; (6) Instructor in Electrical Engineering, \$375 . . . \$6,525.00

II. For facilities, as follows:

Apparatus, stock and materials	\$1,384.16
For text-books and reference books	141.58
<hr/>	
Total	\$8,050.74

SCHEDULE C.—*Disbursements for instruction in English Language, and for facilities for such instruction, during the year ended June 30, 1904.*

I. For instruction, viz.:

For the salaries of Instructors in English Language	\$737.80
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II. For facilities, as follows:

For text-books and reference books	195.51
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Total	\$933.31

SCHEDULE D.—*Disbursements for instruction in Mathematical Science, and for facilities for such instruction, during the year ended June 30, 1904.*

I. For instruction, viz.:

For the salary of the Professor of Mathematics	\$1,950.02
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II. For facilities, as follows:

Apparatus, stock and materials	143.70
For text-books and reference books	54.48
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Total	\$2,148.20

SCHEDULE E.—*Disbursements for instruction in Physical Science, and for facilities for such instruction, during the year ended June 30, 1904.*

I. For instruction, viz.:

For the salaries of (1) Professor of Physics, \$750; (2) Instructor in Physics, \$375; (3) Professor of Chemistry, \$2,000; (4) Instructor in Chemistry, \$700	\$3,825.00
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II. For facilities, as follows:

For apparatus, stock and materials	\$794.00
For text-books and reference books	592.92
<hr/>	
Total	\$5,211.92

SCHEDULE E (2).—*Disbursements for instruction in Natural Science, and for facilities for such instruction, during the year ended June 30, 1904.*

I. For instruction, viz.:

For salary of Professor of Entomology and Zoölogy	\$1,500.04
For salary of Instructor in Entomology and Zoölogy	200.00

II. For facilities, as follows:

For apparatus, stock and materials	122.16
For text-books and reference books	90.65
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Total	\$1,912.85

SCHEDULE F.—*Disbursements for instruction in Economic Science, and for facilities for such instruction, during the year ended June 30, 1904.*

I. For instruction, viz.:

For Professor of Economic Science and History	\$2,000.00
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II. For facilities, as follows:

For text-books and reference books	99.60
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Total	\$2,099.60

TREASURER'S

To the President and Trustees of the New Hampshire Treasurer respectfully submits his report for the period

W. M. PARKER, Treasurer, in Account With New
Dr.

Cash on hand July 1, 1902 . . .	\$134.22	
Income Conant Fund . . .	3,565.00	
Interest State Bonds . . .	4,800.00	
State Appropriation . . .	10,500.00	
Government . . .	40,000.00	
C. S. Murkland, Pres., and C. H. Pettee, Acting Pres. . .	12,958.34	
Interest Hamilton Smith Fund .	400.00	
Transfer from Boiler Appropriation	2,104.50	
Money Borrowed . . .	20,600.00	
L. Thompson, from Real Estate Committee . . .	118.12	
	<hr/>	\$95,180.18

BUILDING FUND.

Balance of State Appropriation (\$15,000.00) July 1, 1902 . . .	\$10,164.00	
State Appropriation . . .	28,000.00	
Transfer from Boiler Appropriation	2,895.50	
	<hr/>	\$41,059.50

BOILER FUND.

State Appropriation . . .	\$5,000.00	
	<hr/>	\$5,000.00

REPORT.

College of Agriculture and the Mechanic Arts:—Your
July 1, 1902 — June 30, 1903.

Hampshire College of Agriculture and the Mechanic Arts.

Cr.

Notes paid and Interest	\$10,050.69
Schedules	85,099.83
Balance on hand July 1, 1903	29.66

————— \$95,180.18

BUILDING FUND.

Schedules	\$37,436.23
Balance on hand July 1, 1903	3,623.27

————— \$41,059.50

BOILER FUND.

Transfer to Regular College Account	\$2,104.50
Transfer to Building Fund	2,895.50

————— \$5,000.00

TREASURER'S

To the President and Trustees of the New Hampshire
urur respectfully submits his report for the period July 1,

WALTER M. PARKER, Treasurer, in Account With New

Dr.

Cash on hand July 1, 1903 . . .	\$29.66
Conant Fund Principal, C. Souci Note	2,000.00
Income Conant Fund	3,179.68
Interest State Bonds	4,800.00
State Appropriation	10,500.00
Government Appropriation	40,000.00
W. D. Gibbs, President, and C. H. Pettee, Acting Pres.	17,783.47
L. Thompson, Treas. Real Estate Committee	109.13
Interest Pillsbury Fund	5.25
Insurance President's House	4,000.00
Interest Hamilton Smith Fund	400.00
Frederick Smythe Legacy	2,000.00
Conant Fund Principal, H. S. Good- win Loan	2,000.00
Conant Fund Net Cash received over Principal, Goodwin Loan	225.30
Transfer of C. H. Pettee, Acting President's Account	55.42
Transfer from Greenhouse Fund	436.07
Transfer from Building Fund	875.01
Money Borrowed	9,999.56
	<hr/> \$98,398.55

BUILDING FUND.

Cash on hand July 1, 1903	\$3,623.27
	<hr/> \$3,623.27

GREENHOUSE FUND.

Solon A. Carter, Treasurer	\$7,000.00
Transfer from Building Fund	80.97
	<hr/> \$7,080.97

REPORT.

College of Agriculture and the Mechanic Arts: Your Treas-
1903 — June 30, 1904.

Hampshire College of Agriculture and the Mechanic Arts.

<i>Cr.</i>	
Notes paid	\$9,400.00
Interest on Notes	599.56
Schedules	77,148.67
Principal C. Souci Note in Manches- ter Savings Bank	2,000.00
Principal F. Smythe Legacy in Man- chester Savings Bank	2,000.00
Insurance President's House in Man- chester National Bank C/D	4,000.00
Part Conant Fund, reinvested (Note received as part payment Goodwin Loan)	1,700.00
Cash Conant Fund (part payment Goodwin Loan) deposited in Man- chester Savings Bank	300.00
Cash Conant Fund (this amount was deposited to credit of regular college account in Manchester Sav- ings Bank and is the amount re- ceived more than required to pay Goodwin Loan	225.30
Cash on hand July 1, 1904	1,025.02

————— \$98,398.55

BUILDING FUND.

Schedules	\$3,238.08
Cash on hand June 30, 1904	385.19

————— \$3,623.27

GREENHOUSE FUND.

Schedules	\$6,275.85
Cash on hand June 30, 1904	805.12

————— \$7,080.97

NOTE INDEBTEDNESS AND FUND STATEMENT

JUNE 30, 1904.

NOTE ACCOUNT.

Notes outstanding July 1, 1903	. \$17,100.00
*Additional Note to pay interest to	
June 30, 1904	. . . . . 599.56
Total Note Indebtedness June 30,	
1904	. . . . . ----- \$17,699.56

FUND STATEMENT.

CONANT FUND.

Receipts	. . . . . \$3,179.68
Expenditures	. . . . . 3,179.68

GENERAL FUND.

Receipts:—

Bal. on hand July 1, 1903	\$29.66
Interest State bonds	. 4,800.00
Annual State Appropriation	. . . . . 3,000.00
Special State Appropriation	. . . . . 7,500.00
L. Thompson, Treas. Real Estate Committee	. 109.13
W. D. Gibbs, Pres., and C. H. Pettee, Acting Pres.	. . . . . 17,783.47
Transfer from C. H. Pettee, Acting Pres. Account	. . . . . 55.42

 \$33,277.68

Expenditures	. . . . . 32,257.91
Balance on hand	. . . . . ----- \$1,019.77

* More than \$250 in interest has been saved to the state by using current funds early in the year to pay \$9,400 of the indebtedness and reborrowing later as the money was needed. For details see treasurer's report.

HATCH FUND.

Receipts	\$15,000.00	
Expenditures	15,000.00	
	<hr/>	

MORRILL FUND.

Receipts	25,000.00	
Expenditures	25,000.00	
	<hr/>	

NEW BUILDING FUND.

Receipts	3,623.27	
Expenditures	3,238.08	
Balance on hand	<hr/>	\$385.19

NEW GREENHOUSE FUND.

Receipts	\$7,000.00	
Expenditures	6,194.88	
Balance on hand	<hr/>	\$805.12

PILLSBURY FUND.

Receipts	\$5.25	
Balance on hand	<hr/>	\$5.25

HAMILTON SMITH FUND.

Receipts	\$400.00	
Expenditures	400.00	
	<hr/>	

FINANCIAL REPORT.

C. S. MURKLAND, *President*, and C. H. PETTEE, *Acting President*.

Summary of Transactions July 1, 1902 — June 30, 1903.

INCOME.

Balance July 1, 1902:

Cash	\$134.22
State appropriation	10,164.00
Income Conant fund	3,565.00
Interest on state bonds	4,800.00
State annual appropriation	3,000.00
State special appropriation	7,500.00
Annual government appropriation	15,000.00
Sundry fertilizer and water analyses	1,209.97
Government appropriation, law of 1890	25,000.00
Interest Hamilton Smith fund	400.00
Transfer from boiler appropriation	5,000.00
Money borrowed	20,600.00
Real estate rents	118.12
State appropriation	28,000.00
Farm, cash sales	744.49
Dairy, cash sales	6,457.14
Horticulture, cash sales	875.92
Book store, cash sales	1,022.70
Students' fees	905.91
Bailey prize	10.00
Commencement expenses	31.20
Miscellaneous sales	329.67
Forestry, cash sales	1,613.44
<hr/>	
Total	\$136,481.78

EXPENDITURES.

Experiment Station	\$16,209.97
Agricultural Department	2,281.93
Dairy Department	9,186.11
Farm Department	5,237.91
Horticultural Department	3,429.12
Forestry Department	\$1,100.84
Transfer to forestry sales	194.23
	<hr/>
	906.61
Mechanic Arts Department	6,895.58
Electrical Engineering Department	1,312.55
Power and Service Department	11,650.93
English Language Department	3,554.23
Mathematical Science Department	2,187.69
Botany and Bacteriology Department	604.13
Chemistry Department	4,136.97
Physics Department	965.47
Zoölogical Department	1,908.24
Economic Science Department	2,325.39
Modern Language Department	590.70
Curator's Department	650.66
Library Department	294.47
Military Department	235.24
Secretary of Faculty	41.00
New Agricultural Building	34,561.73
Buildings and Repairs	640.63
Commencement Expenses	285.56
Fire Insurance Premiums	376.75
President's and Secretary's salaries	1,811.51
Trustees' expenses	1,071.32
Miscellaneous accounts	4,183.66
New boiler account	5,000.00
Notes paid and interest	10,050.69
Balance in treasury, new building fund	\$3,623.27
Balance in treasury, general fund	29.66
Cash at College	242.10
	<hr/>
	3,895.03
	<hr/>
Total	\$136,481.78

EXPENDITURES BY SCHEDULES.

1902.

July	1.	Schedule No. 1	.	.	\$3,575.36
	1.	" 2	.	.	244.75
	2.	" 3	.	.	3,500.00
	15.	" 4	.	.	1,331.07
	18.	" 5	.	.	579.17
Aug.	1.	" 6	.	.	5,947.46
	1.	" 7	.	.	3,154.95
	15.	" 8	.	.	460.07
Sept.	1.	" 9	.	.	4,419.82
	1.	" 10	.	.	464.27
	11.	" 11	.	.	1,592.10
	15.	" 12	.	.	548.76
	30.	" 13	.	.	4,986.48
	30.	" 14	.	.	3,574.24
Oct.	16.	" 15	.	.	564.37
	15.	" 16	.	.	393.28
	31.	" 17	.	.	7,228.80
	31.	" 18	.	.	2,891.29
Nov.	15.	" 19	.	.	413.16
	29.	" 20	.	.	9,450.19
	29.	" 21	.	.	4,331.05
Dec.	13.	" 22	.	.	786.93
	15.	" 23	.	.	508.88
	31.	" 24	.	.	4,450.47
	31.	" 25	.	.	4,639.40

1903.

Jan.	15.	" 26	.	.	332.46
	31.	" 27	.	.	7,239.24
Feb.	15.	" 29	.	.	392.23
	28.	" 30	.	.	6,298.26
Mar.	16.	" 31	.	.	489.50
	31.	" 32	.	.	5,147.46
April	8.	" 33	.	.	122.40
	15.	" 34	.	.	514.48
	16.	" 35	.	.	322.50

April 30.	“	36	.	.	\$6,846.65	
May 15.	“	37	.	.	478.24	
16.	“	38	.	.	12,065.35	
30.	“	39	.	.	5,286.18	
June 15.	“	40	.	.	970.39	
16.	“	41	.	.	277.26	
30.	Transfer schedule 42					
30.	Schedule No. 43				.	5,717.14
30.	Transfer schedule 44					
					<hr/>	\$122,536.06
Notes paid and interest	.	.	.	.	\$10,050.69	
1902.						
July 1.	Bal. on hand, College fund				29.66	
	Bal. on hand, Building					
	fund				3,623.27	
	Cash at College				242.10	
					<hr/>	13,945.72
					<hr/>	\$136,481.78

EXPENDITURES IN DETAIL.

	Hatch fund.	Morrill fund.	General fund.	Depart- ment total.	Total.
Salaries.....	\$9,306.88				
Labor.....	1,379.52				
Publications.....	1,570.67				
Postage and stationery.....	105.81				
Freight and express.....	218.19				
Heat, light, and water.....	337.29				
Chemical supplies.....	97.81				
Seeds, plants, and sundries.....	380.42				
Fertilizers.....	49.90				
Feeding stuffs.....	316.87				
Tools, implements, etc.....	23.14				
Furniture and fixtures.....	70.50				
Scientific apparatus.....	382.44				
Traveling expenses.....	558.72				
Contingent expenses.....	15.00				
Buildings and repairs.....	134.84				
				\$15,000.00	
Expenditures from sundry fertilizer and water anal- ysis fees, on Experiment Station.....	1,209.97			1,209.97	
Total expenditure from Sta- tion funds.....					\$16,209.97
AGRICULTURAL DEPARTMENT.					
Apparatus.....		38.37			
Books.....		128.07			
Instruction.....		1,074.57			
Stock.....		18.09			
Veterinary science instruc- tion.....		186.03			
Buildings and repairs.....			\$252.61		
Freight and express.....			10.72		
Postage and stationery.....			30.50		
Printing.....			145.74		
Traveling expenses.....			86.29		
Animal husbandry instruc- tion.....		260.44			
Poultry instruction.....		50.50		2,281.93	
Carried forward..	\$16,209.97	\$1,756.07	\$525.86	\$18,491.90	\$16,209.97

EXPENDITURES.—*Continued.*

	Hatch fund.	Morrill fund.	General.	Depart- ment total.	Total.
<i>Brought forward</i>	\$16,209.97	\$1,756.07	\$525.86	\$18,491.90	\$16,209.97
DAIRY DEPARTMENT.					
Apparatus.....			282.13		
Instruction.....		1,474.19			
Stock.....			223.18		
Freight and express.....			69.58		
Labor.....			467.07		
Milk purchases.....			5,934.32		
Postage and stationery.....			50.10		
Printing.....			89.50		
Repairs.....			5.46		
Sundry supplies..			583.29		
Buildings and repairs.....			7.29		
				9,186.11	
FARM DEPARTMENT.					
Feeding stuffs.....			1,106.11		
Fertilizers.....			139.50		
Freight and express.....			58.02		
Improvements.....			513.29		
Labor.....			883.14		
Live stock.....			1,735.88		
Seeds and sundry supplies..			170.92		
Tools, implements, and ma- chinery.....			516.38		
Heat, light, and water.....			114.67		
				5,237.91	
FORESTRY DEPARTMENT.					
Instruction.....		176.42			
Traveling expenses.....			4.25		
Labor.....			916.67		
Tools.....			2.00		
Freight and express.....			1.50		
			1,100.84		
Transfer to forestry sales...			194.23	906.61	
<i>Carried forward</i>	\$16,209.97	\$3,406.68	\$14,205.88	\$33,822.53	\$16,209.97

EXPENDITURES.—*Continued.*

	Hatch fund.	Morrill fund.	General.	Depart- ment total.	Total.
<i>Brought forward.....</i>	\$16,209.97	\$3,406.68	\$14,205.88	\$33,822.53	\$16,209.97
HORTICULTURAL DEPARTMENT.					
Instruction.....		812.37			
Apparatus.....			19.84		
Building and repairs.....			63.42		
Feeding stuffs.....			299.24		
Fertilizers.....			20.75		
Freight and express.....			35.93		
Heat, light, and water.....			278.63		
Improvements.....			35.70		
Labor.....			1,040.02		
Live stock.....			275.00		
Postage and stationery.....			2.80		
Seeds and sundry supplies..			318.57		
Tools, implements, and machinery.....			214.10		
Traveling expenses.....			12.75		
				3,429.12	
NEW AGRICULTURAL BUILDING.					
Architect's services.....			1,357.40		
Building committee.....			120.10		
Contingent expenses.....			173.52		
Heating.....			1,770.90		
Lighting.....			254.30		
Lumber.....			369.10		
Mason work.....			1,585.01		
Contractor.....			28,931.40		
				34,561.73	
NEW BOILER ACCOUNT.					
New boiler and pipe line ...			5,000.00	5,000.00	
Total expenditure agricultural departments.....					60,603.41
MECHANIC ARTS DEPARTMENT.					
Instruction.....		2,092.03			
Books.....		92.23			
Apparatus.....		22.83			
Drawing instruction.....		1,526.27			
Shop work instruction.....		2,180.66			
Apparatus.....			613.65		
Stock.....			214.69		
Building and repairs.....			87.43		
Freight and express.....			31.12		
Traveling expenses.....			31.67	6,895.58	
<i>Carried forward.....</i>	\$16,209.97	\$10,133.07	\$57,365.92	\$83,708.96	\$76,813.38

EXPENDITURES.—*Continued.*

	Hatch fund.	Morrill fund.	General.	Depart- ment total	Total.
<i>Brought forward</i>	\$16,209.97	\$10,133.07	\$57,365.92	\$83,708.96	\$76,813.38
ELECTRICAL ENGINEERING DEPARTMENT.					
Books.....		17.28			
Instruction.....		704.09			
Apparatus.....			549.52		
Traveling expenses.....			14.72		
Freight and express.....			16.61		
Labor.....			10.33		
				1,312.55	
POWER AND SERVICE DE- PARTMENT.					
Apparatus.....			2.50		
Coal.....			7,472.12		
Freight and express.....			902.56		
Labor.....			2,267.27		
Repairs.....			55.54		
Stock and supplies.....			950.94		
				11,650.93	
Total expenditure Mechanic Arts department.....					19,859.06
ENGLISH LANGUAGE DEPART- MENT.					
Books.....		197.57			
Instruction.....		3,356.66			
				3,554.23	
Total expenditure English Language department....					3,554.23
MATHEMATICAL SCIENCE DEPARTMENT.					
Books.....		11.00			
Instruction.....		1,900.59			
Bookkeeping instruction...			275.00		
Postage and stationery..			1.10		
				2,187.69	
Total expenditure Mathe- matical Science depart- ment.....					2,187.69
<i>Carried forward</i>	\$16,209.97	\$16,320.26	\$69,884.13	\$102,414.36	\$102,414.36

EXPENDITURES.—*Continued.*

	Hatch fund.	Morrill fund.	General.	Depart- ment total.	Total.
<i>Brought forward</i>	\$16,209.97	\$16,320.26	\$69,884.13	\$102,414.36	\$102,414.36
NATURAL SCIENCE DEPART- MENT.					
<i>Chemistry.</i>					
Apparatus.....			443.17		
Books.....		367.50			
Instruction.....		3,029.01			
Stock.....			122.40		
Freight and express.....			16.68		
Postage and stationery.....			.75		
Repairs.....			5.57		
Traveling expenses.....			99.07		
Printing.....			33.50		
Furniture and fixtures.....			19.32		
				4,136.97	
<i>Botany and Bacteriology De- partment.</i>					
Apparatus.....			37.85		
Books.....		33.88			
Instruction.....		520.00			
Traveling expenses.....			4.15		
Freight and express.....			2.75		
Labor.....			5.50		
				604.13	
<i>Physical Science Depart- ment.</i>					
Apparatus.....			192.72		
Books.....		30.58			
Instruction.....		704.20			
Freight and express.....			.65		
Postage and stationery.....			7.20		
Labor.....			30.12		
				965.47	
<i>Zoölogy Department.</i>					
Apparatus.....			189.76		
Books.....		44.18			
Instruction.....		1,625.00			
Stock.....			18.06		
Freight and express.....			15.65		
Traveling expenses.....			15.59		
				1,908.24	
Total expenditure from Nat- ural Science Department..					7,614.81
<i>Carried forward</i>	\$16,209.97	\$22,674.61	\$71,144.59	\$110,029.17	\$110,029.17

EXPENDITURES.—*Continued.*

	Hatch fund.	Morrill fund.	General.	Depart- ment total.	Total.
<i>Brought forward</i>	\$16,209.97	\$22,674.61	\$71,144.59	\$110,029.17	\$110,029.17
ECONOMIC SCIENCE DEPART- MENT.					
Books.....		158.81			
Instruction.....		2,166.58		2,325.39	
Total expenditure Eco- nomic Science depart- ment.....					2,325.39
MODERN LANGUAGE DEPART- MENT.					
Books.....			3.50		
Instruction.....			585.00		
Postage and stationery.....			2 20	590.70	
Total expenditure Modern Language department...					590.70
CURATOR'S DEPARTMENT.					
Expense.....			7.12		
Labor.....			546.95		
Stock.....			96.59	650.66	
Total expenditure Curator's department.....					650.66
LIBRARY DEPARTMENT.					
Clerical work.....			255.00		
Books.....			16.43		
Freight and express.....			19.38		
Sundry supplies.....			3.66	294.47	
Total expenditure Library department.....					294.47
MILITARY DEPARTMENT.					
Band.....			83.25		
Instruction.....			86.00		
Sundry supplies.....			56.46		
Labor.....			5.90		
Freight and express.....			3.63	235.24	
Total expenditure Military department.....					235.24
<i>Carried forward</i>	\$16,209.97	\$25,000.00	\$72,915.66	\$114,125.63	\$114,125.63

EXPENDITURES.—*Continued.*

	Hatch fund.	Morrill fund.	General.	Depart- ment total.	Total.
<i>Brought forward</i>	\$16,209.97	\$25,000.00	\$72,915.66	\$114,125.63	\$114,125.63
SECRETARY OF FACULTY.					
Postage and stationery.....			34.25		
Printing.....			6.75		
				41.00	
Total expenditure Secre- tary of Faculty.....					41.00
MISCELLANEOUS ACCOUNTS.					
Building and repairs.....			640.63		
Commencement expenses...			285.56		
Fire insurance premiums...			376.75		
President's and secretary's salaries.....			1,811.51		
Trustees expenses.....			1,071.32		
				4,185.77	
					4,185.77
Advertising.....			735.23		
Athletic appropriation.....			200.00		
Bailey prize.....			10.00		
Book store.....			1,132.25		
Chapel expenses.....			47.75		
Clerical work.....			115.44		
Conant scholarships.....			487.50		
Contingent expenses.....			201.57		
Freight and express.....			180.13		
Furniture and fixtures.....			28.36		
E. Mason Memorial prize...			4.00		
Postage and stationery.....			473.32		
Printing.....			65.45		
V. Smith scholarships.....			200.00		
Smyth book fund.....			14.04		
Smyth prizes.....			70.00		
Students' fees.....			22.50		
Traveling expenses.....			137.46		
Chapel instruction.....			20.00		
Keith account.....			38.66		
				4,183.66	
					4,183.66
SUNDRIES.					
Notes paid with interest...			10,050.69		
Balance in treasury, build- ing fund.....			3,623.27		
Balance in treasury, gen- eral fund.....			29.65		
Cash at college.....			242.10		
				13,945.72	
					13,945.72
	\$16,209.97	\$25,000.00	\$95,271.81	\$136,481.78	\$136,481.78

FINANCIAL REPORT.

C. H. PETTEE, *Acting President*, and W. D. GIBBS, *President*.

Summary of Transactions, July 1, 1903 — June 30, 1904.

INCOME.

Balance on hand July 1, 1903, General Fund	\$29.66
Balance on hand July 1, 1903, New Building Fund	3,623.27
Government appropriation, Law of 1890	25,000.00
Government appropriation, Experiment Station	15,000.00
Interest, Land Grant State Bonds	4,800.00
Annual State Appropriation	3,000.00
Special State Appropriation	7,500.00
Special State Appropriation, Greenhouse	7,000.00
Income, Conant Fund	3,179.68
Interest, Pillsbury Fund	5.25
Interest, Hamilton Smith Fund	400.00
Real Estate Rents	109.13
Deposits by W. D. Gibbs, President, and C. H. Pettee, Acting President	17,783.47
Transfer from C. H. Pettee, Acting President	55.42
	\$87,485.88

EXPENDITURES BY SCHEDULES.

1903.

July 20.	Schedule No. 1	\$777.43
31.	“ 2	3,948.93
Aug. 15.	“ 3	589.69
31.	“ 4	3,985.58
Sept. 15.	“ 5	708.36
30.	“ 6	5,947.50
Oct. 10.	“ 7	787.78

Oct.	15.	"	8	.	.	\$758.10
	31.	"	9	.	.	6,908.92
	31.	"	10	.	.	603.49
	31.	"	11	.	.	3,846.07
Nov.	16.	"	12	.	.	570.34
	30.	"	13	.	.	5,529.62
	30.	"	14	.	.	546.40
	30.	"	15	.	.	183.43
Dec.	15.	"	16	.	.	510.97
	16.	"	17	.	.	269.50
	31.	"	18	.	.	4,517.80
	31.	"	19	.	.	109.74
	31.	"	20	.	.	138.57
1904.						
Jan.	15.	"	21	.	.	474.35
	30.	"	22	.	.	5,443.60
	30.	"	23	.	.	44.41
	30.	"	24	.	.	294.23
Feb.	15.	"	25	.	.	564.73
	29.	"	26	.	.	4,876.38
	29.	"	27	.	.	46.54
	29.	"	28	.	.	1,096.37
Mar.	15.	"	29	.	.	539.42
	30.	"	30	.	.	5,049.20
	30.	"	31	.	.	36.29
	30.	"	32	.	.	98.24
April	15.	"	33	.	.	528.29
	30.	"	34	.	.	5,226.28
	30.	"	35	.	.	107.45
	30.	"	36	.	.	32.13
May	15.	"	37	.	.	270.00
	15.	"	38	.	.	699.41
	30.	"	39	.	.	7,224.46
June	15.	"	40	.	.	3,520.08
	30.	"	41	.	.	7,709.73
	30.	"	42	.	.	150.74

 \$85,270.55

Cash on hand July 1, 1904, General Fund	\$1,025.02	
Cash on hand July 1, 1904, New Building Fund	385.19	
Cash on hand July 1, 1904, Green-house Fund	805.12	
	<hr/>	\$2,215.33
		<hr/>
		\$87,485.88

DEPARTMENT ACCOUNTS.

AGRICULTURAL DEPARTMENT, PROF. F. W. TAYLOR.

AGRICULTURAL SCIENCE DEPARTMENT (Morrill).

	Receipts.	Expenditures.
Agricultural Science: Apparatus		\$2.50
Books		257.78
Instruction		1,166.58
Stock		682.93
Animal Husbandry: Instruction		500.00
		<hr/>
		\$2,609.79

AGRICULTURAL SCIENCE DEPARTMENT (General).

Agricultural Science: Freight and express	\$26.74	
Agricultural Science: Postage, stationery, and printing	9.35	
	<hr/>	— \$36.09

NEW BUILDING.

Agricultural Equipment (see p. 9)	\$850.97	— \$850.97
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FARM DEPARTMENT (General).

Farm: Buildings and repairs	\$133.41
Blacksmithing	66.45
Feeding Stuffs	1,112.31
Fertilizers	87.22
Freight and express	58.91
Heat, light, and water	64.64
Improvements	14.65
Labor	1,707.59
Live Stock	75.04

COLLEGE OF AGRICULTURE

Farm: Supplies	\$115.74		
Produce sales	\$2,796.81		
Tools, etc.	83.06		
Labor sales	490.68		
	\$3,287.49	\$3,519.02	-\$231.53

DAIRY DEPARTMENT, I. C. WELD.

DAIRY DEPARTMENT (Morrill).

Dairy: Apparatus	\$101.70		
Instruction	967.44		
Stock	192.80		
			-\$1,261.94

DAIRY DEPARTMENT (General).

Dairy: Supplies	\$330.25		
Buildings and repairs	4.90		
Freight and express	50.82		
Labor	626.27		
Milk	7,560.54		
Postage, stationery, and printing	14.10		
Produce sales	\$8,535.24		
Testing glassware . . . . .	.70		
	\$8,535.94	\$8,586.88	-\$50.94

HORTICULTURAL DEPARTMENT, PROF. F. WM. RANE.

HORTICULTURAL DEPARTMENT (Morrill).

Horticulture: Apparatus	\$21.73		
Instruction	749.92		
			-\$771.65

HORTICULTURAL DEPARTMENT (General).

Horticulture: Supplies	\$64.59		
Buildings and re- pairs	160.65		
Feeding stuffs	270.90		
Fertilizers	132.47		
Freight and express	49.50		
Blacksmithing	63.95		
Heat, light, and water	380.49		

Horticulture: Labor . . .	\$2,132.99		
Live stock . . .	24.96		
Postage, stationery, and printing . . .	19.70		
Seeds, etc. . .	106.38		
Produce sales . . .	\$1,006.40		
Tools, etc. . .	39.33		
Labor sales . . .	1,392.08		
	<hr/>	<hr/>	
	\$2,398.48	\$3,445.91	-\$1,047.43

NEW BUILDING.

Horticultural Equipment (see p. 9)	\$763.84	-\$763.84
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FORESTRY DEPARTMENT (General).

Forestry: Labor . . .	\$103.44		
Sales . . .	\$121.48		
	<hr/>	<hr/>	
	\$121.48	\$103.44	+\$18.04

ROADS AND GROUNDS.

Roads and grounds . . .	\$538.98	-\$538.98
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NEW GREENHOUSE.

New greenhouse . . .	\$6,194.88	-\$6,194.88
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CHEMICAL DEPARTMENT, PROF. C. L. PARSONS.

CHEMICAL DEPARTMENT (Morrill).

Chemistry: Apparatus . . .	\$307.20		
Books . . .	533.50		
Instruction . . .	2,700.00		
Stock . . .	259.57		
	<hr/>	<hr/>	
			-\$3,800.27

CHEMICAL DEPARTMENT (General).

Chemistry: Freight and express . . .	\$12.94		
Furniture and fixtures . . .	24.00		
Postage, stationery, and printing . . .	30.58		
Traveling expenses . . .	70.58		
Breakage account . . .	\$98.68		
	<hr/>	<hr/>	
	\$98.68	\$138.10	-\$39.42

MECHANICAL ENGINEERING DEPARTMENT, PROF. C. A.
READ.

MECHANICAL ENGINEERING DEPARTMENT (Morrill).

Mech. Eng.: Apparatus . . .	\$458.49	
Books . . .	141.58	
Instruction . . .	2,000.00	
Shop work instruction	2,000.00	
Stock . . .	454.35	
	<hr/>	—\$5,054.42

MECHANICAL ENGINEERING DEPARTMENT (General).

Mech. Eng.: Freight and express	\$57.22	
Postage, stationery, and printing .	16.60	
Supplies . . .	\$23.14	
Furniture and fix- tures . . .	20.00	
Labor sales . . .	63.10	
	<hr/>	
	\$86.24	\$93.82
		—\$7.58

POWER AND SERVICE DEPARTMENT (General).

P. and S.: Coal . . .	\$2,909.96	
Freight and express .	50.68	
Labor . . .	2,364.34	
Supplies . . .	1,274.89	
Tools, etc. . .	154.85	
Labor sales . . .	\$385.44	
Postage, stationery, and printing . . .	1.59	
	<hr/>	
	\$385.44	\$6,756.31
		—\$6,370.87

CURATOR DEPARTMENT (General).

Curator: Expense . . .	\$4.57	
Labor . . .	601.01	
Supplies . . .	174.39	
Freight and express .	1.29	
	<hr/>	—\$781.26

BUILDINGS AND REPAIRS (General).

B. and R.: President's house . .	\$595.26	
General . . .	435.18	
	<hr/>	—\$1,030.44

DRAWING DEPARTMENT, PROF. JOS. H. HAWES.

DRAWING DEPARTMENT (Morrill).

Drawing: Instruction	\$1,400.00	
Stock	102.46	
	<hr/>	—\$1,502.46

DRAWING DEPARTMENT (General).

Drawing: Postage, stationery, and printing	\$9.00	
Freight and express	1.47	
	<hr/>	—\$10.47

ELECTRICAL ENGINEERING AND PHYSICS DEPARTMENT,
PROF. A. F. NESBIT.

ELECTRICAL ENGINEERING DEPARTMENT (Morrill).

Elect. Eng.: Apparatus	\$368.86	
Instruction	1,125.00	
	<hr/>	—\$1,493.86

ELECTRICAL ENGINEERING DEPARTMENT (General).

Elect. Eng.: Freight and express . .	\$8.74	
Traveling expenses	15.92	
	<hr/>	—\$24.66

PHYSICAL SCIENCE DEPARTMENT (Morrill).

Phys. Science: Apparatus	\$189.38	
Books	59.42	
Instruction	1,125.00	
Stock	37.85	
	<hr/>	—\$1,411.65

PHYSICAL SCIENCE DEPARTMENT (General).

Phys. Science: Freight and express	\$5.43	
Postage, stationery, and printing	5.30	
Supplies	\$1.41	
Freight and express	13.10	
	<hr/>	
	\$1.41	\$23.83 —\$22.42

COLLEGE OF AGRICULTURE

NATURAL SCIENCE DEPARTMENT, PROF. C. M. WEED.

ZOOLOGICAL DEPARTMENT (Morrill).

Zoölogy:	Apparatus . . .	\$101.95	
	Books . . .	82.45	
	Instruction . .	1,700.04	
	Stock . . .	16.90	
		<hr/>	—\$1,901.34

ZOOLOGICAL DEPARTMENT (General).

Zoölogy:	Supplies . . .	\$132.42	
	Freight and express .	5.82	
	Furniture and fixtures	58.50	
		<hr/>	—\$196.74

BOTANY AND BACTERIOLOGY DEPARTMENT (Morrill).

Botany and Bact.:	Books . . .	\$8.20	
	Stock . . .	3.31	
		<hr/>	—\$11.51

SECRETARY OF FACULTY (General).

Sec'y of Fac.:	Postage, stationery, and printing .	\$24.22	
	Freight and ex- press . . .	.30	
		<hr/>	—\$24.52

ENGLISH LANGUAGE DEPARTMENT, E. R. GROVES.

ENGLISH LANGUAGE DEPARTMENT (Morrill).

English Language:	Books . . .	\$195.51	
	Instruction .	737.80	
		<hr/>	—\$933.31

MATHEMATICAL SCIENCE DEPARTMENT, PROF. C. H.
PETTEE.

MATHEMATICAL SCIENCE DEPARTMENT (Morrill).

Math. Science:	Apparatus . .	\$143.70	
	Books . . .	54.48	
	Instruction . .	1,950.02	
		<hr/>	—\$2,148.20

MATHEMATICAL SCIENCE DEPARTMENT (General).

Math. Science: Furniture and fixtures . . .	\$2.13	
Freight and express . . .	2.21	
	<hr/>	—\$4.34

ECONOMIC SCIENCE DEPARTMENT, PROF. C. W. SCOTT.

ECONOMIC SCIENCE DEPARTMENT (Morrill).

Econ. Science: Books . . .	\$99.60	
Instruction . . .	2,000.00	
	<hr/>	—\$2,099.60

LIBRARY DEPARTMENT (General).

Library: Clerical work . . .	\$227.46	
Books . . .	3.85	
Freight and express . . .	13.08	
Postage, stationery, and printing . . .	2.42	
Sundry supplies . . .	101.44	
	<hr/>	—\$348.25

MODERN LANGUAGE DEPARTMENT, PROF. R. WHORISKEY, JR.

MODERN LANGUAGE DEPARTMENT (General).

Mod. Language: Instruction . . .	\$1,305.76	
Postage, stationery, and printing . . .	5.49	
	<hr/>	—\$1,311.25

MILITARY SCIENCE DEPARTMENT, CAPT. V. A. CALDWELL.

MILITARY SCIENCE DEPARTMENT (General).

Military Sci.: Band . . .	\$25.00	
Books . . .	1.00	
Sundry supplies . . .	74.64	
Freight and express . . .	3.22	
	<hr/>	—\$103.86

MISCELLANEOUS ACCOUNTS (General).

New building grading . . .	\$677.77
Keith account . . . \$1,800.00	195.85
Cash, tuitions, and fees . . 4,497.68	
Contingent expenses . . .	307.39
Commencement expenses . . .	465.32
Trustees' expenses . . .	874.17
Advertising	574.64
President's and Secretary's salaries	3,235.60
Clerical work	174.58
Freight and express	242.11
Postage, stationery, and printing .	618.15
Chapel expenses	69.85
Book store	1,495.16
Book store sales 1,646.45	
Office supplies	64.46
Insurance premiums	1,637.51
Smyth book fund	11.39
Athletic appropriation	200.00
Traveling expenses	73.87
Furniture and fixtures	270.30
Conant scholarships	3,179.68
Smith scholarships	500.00
Mason memorial prize	4.00
Smyth prize	70.00
Bailey prize 10.00	10.00
<hr/>	
	\$7,954.13 \$14,951.80 —\$6,997.67

NEW BUILDING.

New Building: Agricultural Equip- ment	\$850.97
Horticultural Equip- ment	763.84
General	1,623.27
<hr/>	
	—\$3,238.08

HATCH FUND.

Salaries	\$8,549.29
Labor	1,807.16
Publications	1,858.45
Postage and stationery	82.18
Freight and express	141.48

Heat, light, and water	\$123.25	
Chemical supplies	140.15	
Seeds, plants, and sundry supplies	264.76	
Fertilizers	220.09	
Feeding stuffs	162.13	
Library	173.82	
Tools, etc. . . .	266.28	
Furniture and fixtures	188.82	
Scientific apparatus	515.33	
Live stock	78.00	
Traveling expenses	178.03	
Contingent expenses	22.67	
Buildings and repairs	228.11	
	<hr/>	\$15,000.00
Analysis fees \$1,129.21	\$774.71	+\$354.50

The undersigned, duly authorized to audit the accounts of the New Hampshire College of Agriculture and the Mechanic Arts for the twelve months ending July 1, 1904, hereby certifies that he has carefully examined all such accounts, both receipts and expenditures; that he finds the same complete in detail, correctly cast and properly vouched.

C. H. PETTEE,
Auditor.

Approved:

R. W. PILLSBURY,
G. BYRON CHANDLER,
W. D. GIBBS,
Finance Committee.

PRESIDENT'S GOVERNMENT REPORT.

THE NEW HAMPSHIRE COLLEGE OF AGRICULTURE AND THE MECHANIC ARTS.

Durham, N. H., September 1, 1903.

Report of the President to the Secretary of Agriculture and the Secretary of the Interior, as required by act of congress of April 30, 1890, in aid of colleges of agriculture and the mechanic arts.

I. CONDITION AND PROGRESS OF THE INSTITUTION FOR THE YEAR ENDED JUNE 30, 1903, ESPECIALLY—

1. Changes in course or methods of instruction.
2. Purpose, structural character, and cost of new buildings or additions to buildings.

A new agricultural building about 60 x 110 feet, of brick with granite trimmings, two stories with attic and basement, has been built at a cost of \$45,000.

II. Value of additions to equipment during year ended June 30, 1903:—

(a)	Permanent endowment.	
(b)	Buildings	\$45,000.00
(c)	Library	1,155.00
(d)	Apparatus	4,360.02
(e)	Machinery	
(f)	Live stock	2,050.00
(g)	Miscellaneous	
Total		\$52,565.02

IV. NATURE STUDY.

What is being done by your institution to introduce nature study into the public schools of your state? (Please refer to any printed matter on the subject.)

This College has been actively promoting Nature Study in New Hampshire schools for a decade. It probably had the first special summer school of Nature Study of any College in the country, some ten years ago. During the last two years its work in this line has been this: 1. The publication of four Nature Study Leaflets, which have been distributed throughout the state and have been reprinted repeatedly all over the country. 2. The preparation of an Outline Course of Nature Study for New Hampshire schools, by a committee of which Professor of Zoölogy was chairman, said outline being adopted and printed by N. H. State Teachers' Association. 3. The delivery of many Nature Study lectures to County Teachers' institutes in coöperation with the State Superintendent of Public Instruction. 4. The conducting of classes in Nature Study in the State Summer School, and also in the Martha's Vineyard Summer Institute. 5. Continual correspondence with teachers regarding Nature Work in the schools. 6. The publication of various books aimed to help Nature teachers. These include *The Bird Calendar*, Chicago, 1902; *The Tree and Shrub Calendar*, Chicago, 1902; *The Wild Flower Calendar*, Chicago, 1902; *The Flower Beautiful*, Boston, 1903; *Nature Biographies*, New York, 1902.

V. RECEIPTS FOR AND DURING THE YEAR ENDED JUNE 30, 1903.

1. State aid:

(a) Income from endowment granted by state	None.
(b) Appropriation for current expenses	\$10,500.00
(c) Appropriations for building or for other special purposes	33,000.00

2. Federal aid:

(a) Income from land grant, act of July 2, 1862	\$4,800.00
(b) Income from other land grants	
(c) Additional endowment act of August 30, 1890	25,000.00

3. Income from endowment other than Federal or State grants	\$3,965.00
4. Fees and all other sources:	
(a) Tuition fees	905.91
(b) Incidental fees	1,209.97
(c) Miscellaneous receipts	42,076.08
5. Total	\$121,456.96
6. Federal appropriation for experiment sta- tions, act of March 2, 1887	15,000.00

VI. PROPERTY, YEAR ENDED JUNE 30, 1903.

Value of all buildings, \$200,000; of apparatus, \$20,000; of machinery, \$6,000; of library, \$10,600; of live stock, \$3,000; of other equipment, \$15,000.

Total number of acres in farm and grounds, 343; acres under cultivation, 44; acres used for experiments, 10; value of farm and grounds, \$20,500.

Number of acres of land allotted to state under act of July 2, 1862, 80,000; acres still unsold, none.

Amount of land-grant fund of July 2, 1862, \$80,000; amount of other permanent funds, \$70,000.

Number of bound volumes in library, 10,087; pamphlets, 5,200, exclusive of 800 duplicates.

VII. PROFESSORS AND INSTRUCTORS DURING THE YEAR ENDED JUNE 30, 1903.

1. College of Agriculture and Mechanic Arts:	
	Males.
(a) Preparatory classes or schools	
(b) Collegiate and special classes	21
(c) Total, counting none twice	21
2. Number of staff of Experiment Station	14

VIII. STUDENTS DURING THE YEAR ENDED JUNE 30, 1903.

	Males.	Females.
Collegiate classes	96	2
Post-graduate courses	1	
Short, or special courses	22	
	<hr/>	<hr/>
Total, counting none twice	119	2

1. Number of students in regular four-year courses of study in Agriculture, 26; Mechanical Engineering, 26; Electrical Engineering, 11; Chemical Engineering, 8; General Science, 3. (Freshman class not classified as to subjects.)

2. Number of students in short or special courses in Agriculture, 10; Dairying, 8.

3. Number of students in military drill, 98.

4. How many students graduated from undergraduate college courses during year ended June 30, 1903? Men, 14.

5. Average age of students graduated from undergraduate college courses during year ended June 30, 1903. 23.

6. What degrees and how many of each kind were conferred during year ended June 30, 1903? On men, 10 B. S.

7. What and how many honorary degrees were conferred during year ended June 30, 1903? 5 M. S.

(Signed)

CHARLES S. MURKLAND,
President, until May 1, 1903.

CHARLES H. PETTEE,
Acting President, after May 1, 1903.

August 25, 1903.

PRESIDENT'S GOVERNMENT REPORT.

THE NEW HAMPSHIRE COLLEGE OF AGRICULTURE AND THE MECHANIC ARTS.

Durham, N. H., September, 1904.

Report of the President to the Secretary of Agriculture and the Secretary of the Interior, as required by act of congress of April 30, 1890, in aid of colleges of agriculture and the mechanic arts.

I. CONDITION AND PROGRESS OF THE INSTITUTION FOR THE YEAR ENDED JUNE 30, 1904, ESPECIALLY—

1. Changes in course or methods of instruction.

2. Purpose, structural character, and cost of new buildings, or additions to buildings.

1. No new courses of instruction were added during the year and no radical changes in existing courses of instruction were made, although some minor changes added to the efficiency of the courses already offered.

2. A new range of seven greenhouses was added during the year at a cost of seven thousand dollars. In the planning of these buildings much attention was given to arranging them with special reference to teaching practical work in Horticulture and Floriculture. One house is equipped with student benches for practical work. Another is set apart to be used in demonstrating the use of the several kinds of cultivators, weeders, and other forms of tillage implements.

II. VALUE OF ADDITIONS TO EQUIPMENT DURING YEAR ENDED JUNE 30, 1904.

(a) Permanent endowment.

(b) Buildings \$7,000.00

(c) Library	\$1,390.00
(d) Apparatus	1,817.96
(e) Machinery	300.00
(f) Live stock	735.00
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Total	\$11,242.96

III. RECEIPTS FOR AND DURING THE YEAR ENDED JUNE 30, 1904.

1. State aid:

(a) Income from endowment granted by state	None.
(b) Appropriation for current expenses .	\$10,500.00
(c) Appropriations for buildings or for other special purposes	7,000.00

2. Federal aid:

(a) Income from land grant, act of July 2, 1862	4,800.00
(b) Income from other land grants . . .	
(c) Additional endowment act of August 30, 1890	25,000.00

3. Income from endowment other than federal or state grants

3,584.93

4. Fees and all other sources:

(a) Tuition fees	1,358.00
(b) Incidental fees	1,129.21
(c) Miscellaneous receipts	15,460.81
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5. Total \$68,832.95

6. Federal appropriation for experiment sta-

tions, act of March 2, 1887 15,000.00

IV. PROPERTY, YEAR ENDED JUNE 30, 1904.

Value of buildings, \$207,000; of apparatus, \$22,000; of machinery, \$6,300; of library, \$13,000; of live stock, \$3,700; of other equipment, \$15,000.

Total number of acres in farm and grounds, 343; acres under cultivation, 100; acres used for experiments, 25; value of farm and grounds, \$20,500.

Number of acres of land allotted to state under act of July 2, 1862, 80,000; acres still unsold, none.

Amount of land grant fund of July 2, 1862, \$80,000; amount of other permanent funds, \$70,000.

Number of bound volumes in library, June 30, 1904, 10,412; pamphlets, 5,670.

V. PROFESSORS AND INSTRUCTORS DURING THE YEAR ENDED JUNE 30, 1904.

1. College of Agriculture and Mechanic Arts:

	Males.
(a) Preparatory classes.	
(b) Collegiate and special classes	21
(c) Total, counting none twice	21
2. Number of staff of Experiment Station	10

VI. STUDENTS DURING THE YEAR ENDED JUNE 30, 1904.

Preparatory classes or schools.

	Males.	Females.
Collegiate classes	101	5
Post-graduate courses		
Short, or special courses	25	3
Total, counting none twice	126	8

1. Number of students in regular four-year courses of study in Agriculture, 16; Mechanical Engineering, 12; Electrical Engineering, 17; Chemistry, 7; General Science, 5. (Fifty-two freshmen not classified.)

2. Number of students in short or special courses in Agriculture, 18; Dairying, 6.

3. Number of students in military drill, varying from 88 to 94.

4. How many students graduated from undergraduate college courses during year ended June 30, 1904? Men, 14.

5. Average age of students graduated from undergraduate college courses during year ended June 30, 1904. 24.

6. What degrees and how many of each kind were conferred during year ended June 30, 1904? On men, 11 B. S.

7. What and how many honorary degrees were conferred during year ended June 30, 1904? 3 M. S.

(Signed)

W. D. GIBBS,
President.

September, 1904.

CATALOGUE.

CALENDAR.

1904							1905							1906													
JULY							JANUARY							JULY							JANUARY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
10	11	12	13	14	15	16	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
17	18	19	20	21	22	23	22	23	24	25	26	27	28	29	30	31											
24	25	26	27	28	29	30	29	30	31																		
31																											
AUGUST							FEBRUARY							AUGUST							FEBRUARY						
1	2	3	4	5	6	7	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
8	9	10	11	12	13	14	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
14	15	16	17	18	19	20	19	20	21	22	23	24	25	26	27	28	29	30	31								
21	22	23	24	25	26	27	26	27	28																		
28	29	30	31																								
SEPTEMBER							MARCH							SEPTEMBER							MARCH						
4	5	6	7	8	9	10	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
11	12	13	14	15	16	17	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
18	19	20	21	22	23	24	19	20	21	22	23	24	25	26	27	28	29	30	31								
25	26	27	28	29	30		26	27	28	29	30	31															
OCTOBER							APRIL							OCTOBER							APRIL						
2	3	4	5	6	7	8	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
9	10	11	12	13	14	15	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
16	17	18	19	20	21	22	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
23	24	25	26	27	28	29	23	24	25	26	27	28	29	30	31												
30	31						30																				
NOVEMBER							MAY							NOVEMBER							MAY						
6	7	8	9	10	11	12	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
13	14	15	16	17	18	19	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
20	21	22	23	24	25	26	21	22	23	24	25	26	27	28	29	30	31										
27	28	29	30				28	29	30	31																	
DECEMBER							JUNE							DECEMBER							JUNE						
4	5	6	7	8	9	10	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
11	12	13	14	15	16	17	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
18	19	20	21	22	23	24	18	19	20	21	22	23	24	25	26	27	28	29	30	31							
25	26	27	28	29	30	31	25	26	27	28	29	30															

COLLEGE CALENDAR.

1904.

Sept. 6-7. Examinations for admission begin Tuesday at
9 a. m.

Sept. 8. Regular college exercises begin Thursday at
10 a. m.

Oct. 12. Stated meeting of Trustees.

Dec. 23. First term ends Friday night.

WINTER VACATION.

1905.

Jan. 10. Second term begins Tuesday at 10 a. m.

Jan. 11. Stated meeting of Trustees.

March 22. Second term ends Wednesday night.

SPRING VACATION.

March 28. Third term begins Wednesday at 10 a. m.

April 12. Stated meeting of Trustees.

June 4. Baccalaureate sermon, Sunday.

June 6. Stated meeting of Trustees.

June 6. Prize drill, Tuesday a. m.

June 6. Smyth prize reading and speaking Tuesday
evening.

June 7. Commencement day, Wednesday.

SUMMER VACATION.

Sept. 5-6. Examinations for admission begin Tuesday at
9 a. m.

Sept. 7. Regular college exercises begin Thursday at
10 a. m.

Oct. 11. Stated meeting of Trustees.

Dec. 22. First term ends Friday night.

1906.

Jan. 9. Second term begins Tuesday at 10 a. m.

BOARD OF TRUSTEES.

HIS EXCELLENCY GOV. NAHUM J. BACHELDER, M. S.,
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PRES. WILLIAM D. GIBBS, Durham, *ex officio*.

CHARLES W. STONE, A. M., East Andover.

HON. LUCIEN THOMPSON, Durham, *Secretary*.

HON. JOHN G. TALLANT, Pembroke.

GEORGE B. WILLIAMS, Walpole.

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HON. ROSECRANS W. PILLSBURY, Londonderry.

HON. RICHARD M. SCAMMON, Stratham.

WALTER DREW, Colebrook.

GEORGE B. CHANDLER, Manchester.

HARRY E. BARNARD, B. S., Concord.

WALTER M. PARKER, A. B., Manchester, *Treasurer*.

OFFICERS OF INSTRUCTION.

WILLIAM D. GIBBS, M. S., *President and Director of the Experiment Station.*

CHARLES H. PETTEE, A. M., C. E., *Dean and Professor of Mathematics and Civil Engineering.*

CLARENCE W. SCOTT, A. M., *Professor of History and Political Economy; Librarian.*

FRED W. MORSE, M. S., *Professor of Organic Chemistry.*

CHARLES L. PARSONS, B. S., *Professor of General and Analytical Chemistry.*

FRANK WILLIAM RANE, B. AG., M. S., *Professor of Horticulture and Forestry.*

CARLETON A. READ, S. B., *Professor of Mechanical Engineering.*

FREDERICK W. TAYLOR, B. S., *Professor of Agriculture.*

E. DWIGHT SANDERSON, M. S., *Professor of Zoology and Entomology.*

Professor of Military Science and Tactics.

ARTHUR F. NESBIT, S. B., A. M., *Associate Professor of Physics and Electrical Engineering.*

JOSEPH H. HAWES, *Associate Professor of Drawing.*

RICHARD WHORISKEY, JR., A. B., *Associate Professor of Modern Languages.*

E. R. GROVES, A. B., B. D., *Associate Professor of English and Philosophy; Secretary of the Faculty.*

EDWARD L. SHAW, B. S., *Assistant Professor of Agriculture.*

JOHN N. BROWN, *Instructor in Machine Work.*

IVAN COMINGS WELD, *Instructor in Dairying.*

EDWARD H. HANCOCK, B. S., *Instructor in Mechanism and Woodwork.*

HENNING V. HENDRICKS, B. S., *Instructor in Physics and Electrical Engineering.*

HARRY F. HALL, *Instructor in Horticulture.*

A. R. ROSE, B. S., *Instructor in Chemistry.*

JOHN C. BRIDWELL, B. S., *Assistant in Zoology and Botany.*

MABEL E. TOWNSEND, A. B., *Associate Librarian, Registrar.*

EXECUTIVE OFFICE.

EDITH M. DAVIS, *Purchasing Agent.*

LENA B. ROWLEY, *Bookkeeper.*

ENGINEER AND CURATOR OF BUILDINGS.

OSCAR W. STRAW.

AGRICULTURAL EXPERIMENT STATION.

BOARD OF CONTROL.

HON. JOHN G. TALLANT, <i>Chairman</i>	Pembroke
HON. GEORGE A. WASON	New Boston
CHARLES W. STONE, A. M., <i>Secretary</i>	East Andover
HON. WARREN BROWN	Hampton Falls
PRES. WILLIAM D. GIBBS, <i>ex officio</i>	Durham

STATION COUNCIL.

WILLIAM D. GIBBS, M. S., <i>Director</i> .
FRED W. MORSE, M. S., <i>Chemist and Vice-Director</i> .
FRANK WILLIAM RANE, B. Ag., M. S., <i>Horticulturist</i> .
FREDERICK W. TAYLOR, B. S., <i>Agriculturist</i> .
E. DWIGHT SANDERSON, M. S., <i>Entomologist</i> .
EDWARD L. SHAW, B. S., <i>Associate Agriculturist</i> .
IVAN C. WELD, <i>Dairy Manufactures</i> .
HARRY F. HALL, <i>Associate Horticulturist</i> .

ASSISTANTS.

JOHN C. BRIDWELL, B. S., <i>Assistant Entomologist</i> .
H. D. BATCHELOR, B. S., <i>Assistant Chemist</i> .
————— <i>Farm Foreman</i> .
MABEL MEHAFFY, <i>Stenographer</i> .

FOUNDATION AND ENDOWMENT.

The New Hampshire College of Agriculture and the Mechanic Arts was incorporated by the state legislature in 1866, under the provisions of the act of Congress, approved July 2, 1862, entitled "An act donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts," the grant of land having been accepted by an act of legislature, approved July 9, 1863.

The act of 1862 provides that the income from the investment of the money realized from the sale of the lands shall be appropriated "to the endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

The "Morrill Bill," which was approved August 30, 1890, and received the assent of the state by an act of legislature, approved February 13, 1891, provides an appropriation for the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts, established under the provisions of "the act of 1862."

The appropriation under the Morrill act is "to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

Under an act of Congress approved March 2, 1887, which received legislative assent August 4, 1887, was established

that department of the college known as the Agricultural Experiment Station, the purpose of which was "to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science"

Benjamin Thompson, who died January 30, 1890, was a resident of Durham, and a farmer by profession. He had at heart the agricultural interests of his native state, and in the furtherance of those interests he bequeathed to it at his death his whole estate with a few minor reservations.

Mr. Thompson's final statement of the object of his bequest was as follows: "My object being mainly to promote the improvement of agriculture, though willing that the college to be established should also provide for the mechanic arts, it is my will that the institution to be established by the state * * * shall be called and designated * * * The New Hampshire College of Agriculture and the Mechanic Arts, if that shall be the wish of the state; and that in addition to the instruction to be given therein, as provided by my said will, there shall be taught only such other arts or sciences as may be necessary to enable said state to fully avail itself of said donation of lands by the government in good faith, which two branches of instruction shall be the leading objects of said institution or college"

By the provisions of the will, the income from this source will not, however, become available until 1910. This endowment will amount at that time to nearly \$800,000, the annual income from which will be about \$32,000.

The state legislature accepted the Thompson bequest March 5, 1891, and on April tenth of the same year appropriated \$100,000 for buildings. Approximately \$50,000 was realized from the sale of property and from other sources. In 1893 an additional appropriation of \$35,000 was made by the state for completing and furnishing the

buildings. Accordingly in 1893 the college was moved from its first home at Hanover to its present location at Durham.

The general government of the college is vested in a board of thirteen trustees. The governor of the state and the president of the college are trustees, *ex officio*; the alumni of the college elect one trustee; and all other trustees are appointed by the governor of the state, with the advice and consent of the council.

The college is executing the trust reposed in it by giving instruction in the various courses described in this catalogue under the prescribed heads of "agriculture" and "the mechanic arts."

The income for the current year is from the following sources: From the federal land grant of 1862, \$4,800; from the federal government under the act of 1887, \$15,000, to be applied only for use of the Agricultural Experiment Station; from the same source under the act of 1890, \$25,000; and from the state, \$10,500; and from various other sources, about \$5,000.

GENERAL INFORMATION.

The New Hampshire College of Agriculture and the Mechanic Arts is a part of the public school system of the state. It stands, in its agricultural, mechanical engineering, electrical engineering, technical chemistry, and general scientific courses, in the same relation to the high schools that the high schools stand to the grammar schools, and that these in turn stand to the elementary schools. In other words, it is a continuation of the grades of the public school system of the state, with special reference to the industrial pursuits, and, in the courses that are provided as described elsewhere in this catalogue, it aims to give a practical training that shall fit the student to deal with the problems of life.

TUITION.

The tuition fee is \$60 per year, although numerous scholarships give free tuition to many New Hampshire students.

SCHOLARSHIPS.

Conant Scholarships.—There are twenty-five Conant scholarships, each paying \$40 and tuition, \$60—total, \$100. These are to be assigned under the following conditions:

1. They are to be given to young men taking an agricultural course.
2. Each town in Cheshire county is entitled to one scholarship, and Jaffrey is entitled to two.
3. Scholarships not taken by students from Cheshire county, and those in excess of the number of towns, will be assigned to agricultural students, and may be divided at the discretion of the president.

Senatorial Scholarships.—There are twenty-four senatorial scholarships,—one for each senatorial district. Each

scholarship is to pay tuition, \$60. Senatorial scholarships not filled can be assigned to students from other localities at the discretion of the faculty; they are open to students in all courses.

Early application should be made for these scholarships. They will be reserved for those respective towns and districts until August 1 of each year, after which they may be otherwise assigned for the year.

These scholarships are given for the purpose of aiding deserving students, and will be withdrawn from those who use tobacco or intoxicating liquors, or show themselves not deserving. Janitorships, work on the farm, etc., also furnish assistance to a considerable extent.

Valentine Smith Scholarships.—Through the generosity of the late Mr. Hamilton Smith of Durham the sum of \$10,000 has been given to the college to establish the Valentine Smith scholarships.

“The income thus accruing to the college shall be given to the graduate of an approved high school or academy who shall, upon examination, be judged to have the most thorough preparation for admission to the college; *provided*,

“That this income shall be paid to the student to whom it is awarded, in eight semi-annual payments, at the time appointed for the payment of term bills; and

“That if the student receiving this scholarship shall at any time prove unworthy, in the judgment of the faculty, by reason of defective scholarship or character, he shall forfeit his claim to the student most deserving; and

“That if the student receiving this scholarship shall cease to be a member of the college, the income from this fund, for the unexpired term, shall be awarded to the student most deserving in character and scholarship.”

These scholarships yield \$400 annually or one hundred dollars to each holder.

Competitive examinations for this scholarship will be held at the college at the time of the entrance examinations in September, and at no other time.

Grange Scholarships.—Each subordinate and Pomona grange in New Hampshire has the privilege of appointing one student annually to a free scholarship in any of the four-year or two-year courses in the college, each appointment to be good for four years if in a four years' course, and for two years if in a two years' course. Students holding these scholarships will be relieved from paying the annual tuition fee of sixty dollars, but will not be relieved from payment of incidental or other fees. Scholarships may be forfeited at any time by misconduct of the student or by his failure in a sufficient number of studies, or by his inability to meet the entrance requirements. Women may hold these scholarships on the same terms as men.

The method of appointment is entirely at the option of the grange; it may be by election, competitive examination, or otherwise.

PRIZES.

I. *The Smyth Prizes.*—Through the generosity of the late ex-Governor Frederick Smyth, the following prizes have been offered: three prizes, one of twenty, one of fifteen, and one of ten dollars, for excellence in oratory. To the members of the sophomore and freshman classes, two prizes for reading, one of fifteen and one of ten dollars. Since the death of ex-Governor Smyth the prizes have been continued by Mrs. Marion C. Smyth.

II. *Bailey Prize.*—Dr. C. H. Bailey, of Gardner, Mass., and E. A. Bailey, B. S., of Keene, N. H., offer a prize of ten dollars for proficiency in chemistry.

III. *Erskine Mason Memorial Prize.*—Mrs. Erskine Mason, of Stamford, Conn., has invested one hundred dollars as a memorial of her son, a member of the class of 1893, the income of which is to be given, for the present, to that member of the senior class who has made the greatest improvement during his course.

ESTIMATE OF EXPENSES.

Tuition	Free	\$60.00
Text-books	\$10.00 to	30.00
Military uniform for new students	16.00 to	16.00
Drawing instruments and materials	7.50 to	30.00
Fees*	20.00 to	20.00
Room rent, including fuel	30.00 to	50.00
Board, \$3 to \$3.50 per week, for thirty-five weeks	105.00 to	122.50
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Total	\$188.50	\$328.50

Room rent is estimated on the supposition that two students occupy the same room or suite of rooms.

Rooms may be obtained either furnished or unfurnished. Most of the rooms are in suites, and are in buildings provided with heating apparatus and bath-rooms.

The college has no rooms for students.

For further information, address New Hampshire College, Durham, New Hampshire.

COURSES FOR WOMEN.

Women attending the college may elect any course laid down in the curriculum, subject to the conditions prescribed for all students. They may omit manual labor on the farm and in the shop, and substitute other studies.

The general course, with its electives, is specially prepared for women, and is so planned that special courses may be arranged in literature, languages, history, philosophy, pedagogy, drawing, biology, and manual training.

The courses in agriculture and chemistry afford opportunities for the study of the natural sciences, and the engineering courses offer exceptional advantages in mathematics and physics.

*Includes all charges commonly considered extras, except those for breakage and damage to college property.

POST-GRADUATE STUDY.

The college offers opportunities for post-graduate study in agriculture, biology, and chemistry.

After the satisfactory completion of an appropriate amount of post-graduate work, advanced degrees will be given.

SPECIAL STUDENTS.

Special students shall be admitted only by vote of the faculty. Any person of mature years (not a candidate for a degree) may be so admitted upon presenting satisfactory evidence of his ability to complete the desired course of study.

REGISTRATION.

All undergraduate students who desire to attend the college during a given term are required to register at the president's office on or before 4 p. m. of the first day of such term. Every former student registered after the first day of any term shall be charged for such registration a fine of one dollar for the first day and fifty cents additional for each succeeding day, to be remitted only by the president upon presentation of a substantial excuse for the delay.

Students shall be admitted to classes only upon presentation of their registration card.

ATTENDANCE.

All students are required to attend chapel; all male students are required to attend military drill.

TERM BILLS.

Tuition and fees are payable in advance, in two equal instalments: one on the first day of the fall term and the other on the first day of the winter term, of each year. No student shall receive his registration card or attend classes until his bills are paid.

ELECTION OF STUDIES.

Every student shall, on or before the Saturday before the last in each term, notify in writing the secretary of the faculty of his elections for the term following. Any student, who, having made his elections, desires to change, shall make application to the faculty in writing, with a statement in full of his reasons.

Any student who fails to fill out his elective slip on or before the date mentioned, shall pay a fine of one dollar before he can be registered for the studies of the next term, unless he has previously obtained from the secretary of the faculty a written excuse for delay.

AMOUNT OF WORK.

No student shall be permitted to carry less than sixteen nor more than twenty-one credit hours per week of classroom work or its equivalent, exclusive of military tactics, without the consent of the faculty.

LOSS OF STANDING.

No student shall be registered in any class until he has completed three fourths of the work of the preceding year, and all the work required up to the beginning of that year.

EXAMINATION ON ENTRANCE DEFICIENCIES.

Students conditioned on entrance examinations may have an opportunity to make up such deficiencies upon the two days preceding the beginning of the fall term, and upon the last Saturday of each term. A student who takes a deficiency examination upon an entrance subject, at any other time, must pay the college one dollar for each examination upon each subject.

Students who have any entrance condition outstanding at the beginning of the third year of residence at the college, or more than one at the beginning of the second year, will not be allowed to register until such conditions have been removed.

THESIS.

A thesis upon some subject connected with the work of the course taken is required of every candidate for a degree. The subject, together with a written approval of it by the head of the department within which it lies must be submitted to the president before the fifteenth day of December preceding graduation. The completed thesis shall be submitted to the head of the department concerned not later than the second Tuesday preceding Commencement. The thesis shall be typewritten or printed upon standard thesis paper, 8½ by 11 inches, medium weight, neatly bound in black cloth, and gilt lettered on first cover with title, name of author, degree sought, and year of graduation. This bound copy shall be approved by the faculty, filed, and left with the college librarian.

GRADUATION.

Those who complete a four years' course or its equivalent will be recommended for the degree of Bachelor of Science. No equivalent for one of the four years' courses will be accepted which does not contain an average of at least eighteen credit hours per term, in addition to military drill, for four years, and all of the required subjects of the first two years which are common to all of the four-year courses.

The regular work of the senior class, including the regular final examinations, is completed at 4 p. m. on the Tuesday of the week preceding Commencement; and each member of the class may receive a statement of his standing at the office of the secretary of the faculty at 3 p. m. on the next day, Wednesday.

SUNDAY SERVICES.

Although the only church in Durham is nominally Congregational, it is attended by citizens of all denominations, and sectarian lines are never drawn. It is conveniently situated, and with its regular services, its Sunday-school,

prayer-meetings, and young people's meetings, it offers ample opportunity for religious observance.

SITUATION AND RAILROAD CONNECTIONS.

Durham is situated on the Western division of the Boston and Maine Railroad, sixty-two miles from Boston, and about midway between Rockingham Junction and the city of Dover, being five miles from the latter place.

BUILDINGS.

THOMPSON HALL.

Thompson Hall, the main college building, has a length of 128 feet, exclusive of a *porte-cochere* 40 feet long, and a width of 93 feet in the widest part. It is built of granite and brick, and has three stories besides the basement.

The basement contains an armory, a locker room for athletic purposes, a shower-bath, a blower-room, with apparatus for controlling the heating and ventilation of the building, geological laboratory, a lavatory, and rooms used for storage.

One half of the first floor is devoted to the library, which is provided with a large, well-lighted reading room for papers and magazines, a reference room for special work, a librarian's room, a delivery room, and shelf space for fifty thousand volumes. The remainder of the first floor is used for offices, recitation rooms for mathematics and history, and a waiting-room for women.

On the second floor are more offices, the botanical and zoölogical laboratories, the drawing-room, and recitation rooms for biology, mechanical engineering, philosophy, and modern languages.

On the third floor is the large hall used as an auditorium, two literary society rooms, and the bell-boy's room.

The building is lighted by gas and electricity, and provided with the most approved system of heating and ventilation.

MORRILL HALL.

This building was erected in 1902 at a cost of about \$30,000. It is 110 feet long and 58 feet wide, comprising four stories, including the basement. It is plain and simple in outline, and gives the impression of strength and solidity.

The material is brick, laid in Flemish bond, with trimmings of the clear, almost white Suncook granite. These relieve and brighten to a certain extent the general effect of plainness and simplicity. The roof is of slate, and the construction throughout is designed to give the greatest possible security against fire. All the partition walls are of brick, and the steam for heating is taken from the boilers at the central station, near the Mechanical Building. The Johnson system of automatic temperature regulation has been installed. Adequate ventilation is secured throughout the building by means of a large fan in the basement. All the floors are of maple, except the basement, which is of cement. Only the ceilings of the rooms are plastered, the side walls being of bare brick, calcimined Indian red.

A vestibule, eight feet wide, runs through the centre of the building the long way on each floor, except the fourth.

In the south end of the basement there is a room 56 by 32 feet, which is used for the exhibition of the different makes of agricultural implements and tools. The north end of the basement is fitted up for a live stock judging room. On the basement floor there is also a lavatory, provided with wash-stands and shower-bath, a bulletin mailing room, a soil-storage room, a fan and heating room, and a janitor's room.

The first floor is occupied by the department of agriculture. It contains two class-rooms—one for agronomy, and one for animal industry—a soil physics laboratory with a preparation room attached, an agricultural reading-room, a stenographer's room, the farm superintendent's room, and the offices of the professor and assistant professor of agriculture.

The second floor is occupied by the horticultural department. It contains one class-room, a pomological laboratory, a forestry laboratory, a herbarium room, a horticultural reading-room, and the offices of the professor and assistant in horticulture. The second floor is also provided with a refrigerator room, in which the fruits and vegetables used

for laboratory work may be preserved. Both the first and second floors are provided with fireproof vaults in which important records and expensive equipment are kept.

CONANT HALL.

(Chemical and Physical Laboratories.)

Conant Hall contains the laboratories and lecture-rooms for instruction in chemistry, physics, and electrical engineering. It is a substantial brick building, 92 by 70 feet, and three stories high, including the basement. It is heated by steam brought from the shops, lighted by gas and electricity, and provided with a system of thorough ventilation. Water, gas, high pressure steam, hydrogen, oxygen, vacuum, and blast are supplied through pipes wherever needed, and the lecture rooms in addition have switches controlling both dynamo and battery currents, and arrangements for stereopticon illustration.

The basement contains a small workshop, the battery, photometer, photographic, and comparator rooms, a clock room protected by double walls against changes in temperature, an acid room, and a water and gas laboratory provided with the necessary fixtures and appliances.

The first floor, with the exception of one room, is occupied by the physics department. It contains the mineralogical laboratory, which is provided with tile-covered desks and other facilities for blowpipe analysis; the junior physical laboratory; an apparatus room; a reading and reference room for physical and electrical books and periodicals; an electrical laboratory, from the neighborhood of which masses of iron have been excluded, so that magnetic measurements can be made with a good degree of accuracy; and the physical lecture-room, which is provided with all necessary conveniences, as before mentioned. For optical experiments, the room can be darkened by means of special window-shutters, operated from one of the lecture-desks. A stone pier between the two desks makes it possible to use delicate instruments.

The second floor is given up entirely to the chemical department. It contains storerooms, an organic laboratory, a qualitative laboratory, a private laboratory, a dark room for polariscopic and spectroscopic work, a lecture-room provided with facilities as before described, a quantitative laboratory, and a room for the delicate chemical balances and most important reference works.

The laboratories are fitted up with the most modern accessories, and with special reference to the kind of work to be performed in each.

SHOPS.

These have been built in order to provide facilities for instruction in the working of wood and metals. The buildings are constructed on the "slow-burning" principle, with thick walls, and heavy, continuous plank floors. The rooms are all well lighted and well ventilated.

The main building is 42 by 106 feet, and two stories high, with a basement 31 by 42 feet. The basement is used as an engine room and laboratory. The largest room on the first floor is the machine shop, where there is opportunity for practice in the operation of working metals by cutting tools, both by hand work and by machinery. On this floor a lavatory is provided. The second floor is mainly occupied by a wood-shop, in which the common branches of carpentry, joinery, and pattern making are taught. Practice is given in the use of carpenters' tools, and in the care and operation of the machines of most general use in wood-working.

Joined to the main shop building and on a level with its basement is a one-story building, 40 by 100 feet, containing the boiler room, repair shop, forge shop, and foundry.

There are four boilers, aggregating two hundred and forty horse-power, which furnish steam to all the college buildings, wherever needed for heating or power. A brick chimney, ninety-five feet high, carries away the waste gases from the furnaces.

In the forge shop instruction is given in forging, welding,

tempering, and riveting, and in the foundry the student is taught to mold and cast from the various patterns made in the wood-shop.

NESMITH HALL.

Nesmith Hall, a brick building two stories in height, is used for the work of the Agricultural Experiment Station. It contains offices and working rooms, a reference library, and chemical, entomological, bacteriological, and botanical laboratories.

DAIRY.

The dairy building is a wooden structure of one and one half stories, with basement. It contains six rooms equipped for manual training in milk testing, milk and cream pasteurizing, cream ripening, butter-making, and the care and management of dairy machinery.

The first floor is used for receiving milk and for the separators. On this floor is also the office of the instructor and the laboratory for milk testing. The basement contains the ripening vats, churns, and refrigerators, together with the engine.

BARN.

The cattle barn is a wooden structure, the main portion of which is 50 by 100 feet, two stories in height, with a large basement. It has a one-story L, 40 by 100 feet, with a basement under two thirds of it. This barn is a model structure, erected at an expense of about ten thousand dollars. It has accommodations for about sixty head of cattle, which are provided with sanitary stalls. There are the necessary divisions for storage of hay, grain, and seeds, and rooms for milk scales, ensilage cutter, and repair shop. In addition there is a cold-storage room and a feed room. There are two silos, each having a capacity of about one hundred and twenty-five tons.

A second barn is used by the agricultural department for storing hay and implements, and stabling the department horses.

A third barn, about 30 by 60 feet, is used at present for keeping the horses and implements employed by the horticultural department.

GREENHOUSES.

The new range of greenhouses has been specially planned and built for carrying on modern and up-to-date work in greenhouse management and handicraft. There are seven distinct houses besides a propagating hallway. Connected with the glass structure is a workroom 20 by 30 feet, which also answers as an office for the florist, and is equipped with scales, seed-boxes, and other accessories. The basement of the workroom, or potting house, is used for a boiler room and storeroom for potting soils. The attic has two good rooms, one of which is occupied by the greenhouse attendant. The whole system is heated by steam, the boiler being a Lord & Burnham Co. sectional. The houses are piped so that the temperature can be regulated for any kind of crop, and offer exceptional opportunities for experimental work. The main palm house and four of the lateral houses were built by the Lord & Burnham Co., greenhouse contractors, and are of steel superstructure. The other two, together with the passageways to the potting house, are constructed of cypress, with angle iron eaves plates and iron supports. One house is equipped for greenhouse management instruction, and each student is given definite laboratory space and prescribed work. Two of the houses have ground beds, and are adapted for forcing vegetables, while the remaining houses have raised beds, excepting the centre of the palm house, which is a ground bed.

These houses are lighted with electricity and offer unusual facilities for instruction and experimentation. When students have completed the required greenhouse courses, they are prepared to take positions as florists or gardeners of estates, etc.

LABORATORIES AND EQUIPMENT.

AGRONOMY.

This department is provided with a collection of dried specimens of the different forage crops, the more important varieties of corn, wheat, and oats; and with a large number of lantern slides, grass charts, and other illustrative material. The soil physics laboratory is equipped with soil bins, a compacting machine, chemical and torsion balances, and various kinds of physical apparatus for the study of soils, including that for the determination of specific gravity and for the making of mechanical analyses.

The agricultural museum contains many of the latest models of the different makes of farm machinery, tools, and appliances, including plows, cultivators, harrows, mowers, rakes, corn binders, manure spreaders, different kinds of cattle ties, and various makes of patent wire fences.

The college farm, with its three hundred acres of land, has a variety of soils and soil conditions suited to the growth of nearly all the important farm crops, and thus offers excellent opportunities for practical work and demonstration in the department of agronomy.

ANIMAL INDUSTRY.

For the various courses in animal industry an extended use is made of the live stock of the college farm. The dairy herd consists of representative animals of the following breeds: Ayrshires, Guernseys, Jerseys, and Shorthorns. The college owns six head of horses representing the draft type, and to become acquainted with the trotting and thoroughbred types the students are taken to various stock farms where these types can be inspected and judged.

For the study of the different breeds of sheep and swine the college flock of thoroughbred Southdowns and herds of medium Yorkshires and Berkshires are used. Representatives of other breeds are rented for practical study and judging.

In the new agricultural building a large room has been

fitted up for the judging of live stock, instruments for precise measurements are provided, and score cards with a scale of points for each kind of animal are used.

The class-room is provided with a stereopticon lantern, and a large collection of lantern slides is used to show the leading individuals of several breeds of live stock. The herd books of the several breeds are made use of in familiarizing the student with methods of tracing pedigrees and the practices of breeders' associations.

HORTICULTURE.

The facilities for instruction in the various lines of horticulture have vastly improved during the past year. The completion of Morrill Hall gives this department the entire second floor, containing offices, lecture-room, laboratories, herbarium room, seminary and library room, and a cold-storage room. On the basement floor this department has also in conjunction with the agricultural department a photograph room, soil, and carpenter's room, and an implement room. The lecture room is fitted up with a stereopticon lantern. The pomological and vegetable gardening laboratories are of original design, and offer every facility for modern work. During the fall term over one hundred varieties of apples are studied by the students. Persimmons and tropical fruits are received from Florida, grapes and pears from western New York, and other fruits, apples in particular, from Pennsylvania, West Virginia, New York, Ohio, Minnesota, Oregon, various parts of New England, and Canada. Large numbers of varieties of vegetables are grown in the experiment station trial grounds, and these offer exceptional opportunities for identification and study in the laboratory for some time after field conditions have gone by. The orchards, gardens, and grounds also offer opportunities for demonstrating the theories advocated in the lecture-room. Many varieties of different kinds of fruits are to be found in the orchards. These are young, but coming into bearing. The plum orchard has sixty varieties in bearing. Grapes, peaches, apples, cher-

ries, and small fruits are also grown at the Experiment Station. Propagation of fruits, shrubs, and flowering plants is practised. A fine collection of Vilmorin charts is owned by the department. The collection of lantern slides is continually being enlarged.

COLLEGE FOREST.

A beautiful tract of sixty acres of old forest growth is owned by the college. It is located close at hand, and offers exceptional opportunities for studying forestry. The country about Durham presents forestry conditions typical of New England, and the transplanting of trees, sowing of seeds, and general questions of forestry management may here be studied in Nature's laboratory.

DAIRY.

Through the courtesy of leading manufacturers of dairy and creamery appliances, all available space is filled with various forms of cream separators, milk coolers, churns, and other dairy appliances. The most approved appliances for milk testing form a part of the regular equipment. Steam is supplied by the large boilers at the power-house. In addition to the product of the college herd, milk is received from about twenty-five farms in Durham and vicinity. Through this arrangement the college is able to furnish plenty of milk for practice work, and to provide for a most thorough and practical training in dairy and creamery management.

MECHANICAL ENGINEERING.

The basement and westerly rooms of the main shop building are used as engine room and mechanical laboratories, and contain the forty horse-power engine which furnishes power for the shops and electric lighting of the college buildings; a shaft-governor, slide-valve engine; a direct acting steam pump; and the large compound duplex pump which receives water under a head of fifteen feet through an eight-inch pipe from a reservoir one half-mile distant, and forces it through underground mains to the various

hydrants and buildings, or through nozzles for measurements during tests. This pump, with its long supply pipe, a ten-inch standpipe, and a 6,000-gallon standpipe, furnish an apparatus for an extensive series of hydraulic experiments. It is fitted with indicator motions and other necessary equipment for complete duty tests.

Among other apparatus is a 50,000-pound Olsen machine with the necessary tools and measuring instruments for tension, compression, and transverse tests; a 2,000-pound wire machine; an indicator tester; a marine gas engine; a Westinghouse air-brake pump; steam and gas engine indicators; a surface condenser with a capacity of 2,000 pounds of steam per hour, fitted with a 5½ by 8 by 7 air pump; and the usual supply of scales, gauges, thermometers, and small apparatus. The three sectional boilers, and the one hundred horse-power horizontal return tubular boiler, with the 95-foot brick stack are used for boiler tests and flue gas analysis by means of an Orsat gas apparatus, a pyrometer, and thermometers reading to 1,000 F. The ventilating fans and engines of the various buildings, as well as the new engines at the creamery and in the electrical laboratory, are available for testing. Opportunity is given for the student not only to test the machine or engine, but to become familiar with its construction and operation.

In addition to the instruction given in the laboratory, excursions are made to various outside power plants, and, when practicable, tests are made, thus enabling the student to become familiar with various types of engineering practice.

WOOD-SHOP.

This occupies the larger part of the second story of the main building. It is supplied with benches and the necessary tools to accommodate twenty students at one time. Other equipment consists of a circular saw, board-planer, buzz-planer, jig-saw, speed-lathes, a large pattern maker's lathe with molding and boring attachments. A stock and pattern room on the same floor provides storage for lumber,

patterns, and unfinished work. The course in woodwork consists of practice in carpentry, joinery, cabinet-making, and turning. Much of the advanced work consists of making apparatus and cabinets for use about the college. Following this work is the course in pattern-making, special attention being given to methods of design.

MACHINE SHOP.

The equipment is as follows: seven engine lathes, a 14-inch by 6-foot speed-lathe, built by students; a vertical drill, built by students; a 30-inch Flather planer; a universal milling machine with gear-cutting and spiral attachments; shaper; power hack saw; twelve benches with vises; and a large number of small tools, including micrometer, calipers, and gauges necessary for accurate work. The lathes in the wood-shop were built here, and several more are in process of construction.

FORGE SHOP.

This contains thirteen Sturtevant down-draft forges with anvils and necessary tools. The blast to the forges is furnished by a No. 4 blower, and the smoke carried away by a 60-inch exhauster. These are driven by a 3 by 5 vertical engine. The student is taught the principles of forging, welding, and tempering of iron and steel. Special attention is given to accuracy of dimensions as well as of shape and finish.

FOUNDRY.

The foundry is supplied with a furnace, molding benches, flasks, and bench tools. Foundry work is taken in connection with the course in pattern making, and the student molds and casts from the patterns he has constructed in the wood-shop. Castings are made in iron, brass, and alloy, and tests are made on "test bars" of each.

PHYSICS AND ELECTRICITY.

The physical laboratory is equipped with a good collection of the usual apparatus for laboratory work and lecture-

room illustration, to which will be continually added pieces purchased or made in the college shop.

In the junior laboratory of physics there has been added apparatus for studying absorption phenomena and the comparison of spectra of films, liquids, metals, etc.; for measuring the angles of crystals and indices of refraction; for verifying the laws of refraction and total reflection of light; for determining the moment of inertia of various forms of specimens.

In electricity and magnetism, the equipment includes instruments of high precision and of the latest forms, such as: a magnetometer for studying the intensity of the earth's magnetism; a universal tangent galvanometer capable of assuming a variety of forms and measuring currents from a small fraction of an ampere to one hundred amperes; a high grade, four-spool Thomson reflecting galvanometer; a Ryan electrometer for tracing pressure and current waves; a standard ballistic galvanometer; an Ayrton & Perry's variable standard of self-induction, as well as others of less accuracy for elementary work; a complete photometer equipment for comparing incandescent and arc lamps, and the distribution of light from the latter for both open and inclosed arcs; a small, low-potential testing unit, consisting of a universal alternator belted to a direct current motor, and capable of adjustment to be driven from either the direct or alternating side; a low-potential transformer, either side arranged to be connected to the universal alternator or to the secondary of the transformer on the lighting system; a bank of lamps for illustrating the various methods of distributing from mains for lighting systems, or affording loads in obtaining characteristics, efficiencies, etc.; and standard forms of voltmeters and ammeters.

For more strictly electrical engineering work, the department has the five-hundred-light alternator used in lighting the college buildings, a direct current "exciter" dynamo, all the apparatus of a complete fifty-five-light Edison iso-

lated electric lighting plant, arc, and incandescent lamps, and standard forms of voltmeter, ammeter, and transformer.

In the dynamo laboratory, a Westinghouse junior engine has been installed. It is capable of developing about twenty-three-brake horse-power under one hundred pounds steam pressure. This engine, being on a practically independent line of steam pipe, is expected to maintain good speed regulation of the main line shaft to which it is belted, and from which power is delivered to countershafts, and thence to the various dynamos and workshops of the department. A set of wood and metal working tools, and a 14-inch, 8-foot bed Flather engine lathe, with complete attachments, have been purchased for this shop.

CHEMISTRY.

The several chemical laboratories are modern in design, commodious, and well equipped. Each is supplied with the latest forms of apparatus required for its particular work. Besides all necessary glass and porcelain ware, this includes water baths, drying ovens, combustion, muffle and assay furnaces, platinum dishes and crucibles, polariscope, spectroscope, balances, lantern, and other lecture appliances, etc.

ZOOLOGY.

The zoölogical laboratory is well supplied with aquaria, microscopes, dissecting tools, charts, reference books, and collections. The latter include a representative display of the birds of New Hampshire, and a very large collection of the insects of the state arranged in glass-covered boxes. New tables have recently been added to the equipment of this laboratory.

BOTANY.

The botanical laboratory is supplied with a good herbarium, microscopes, and the other necessary appliances.

SURVEYING.

The surveying instruments are sufficient in number and of the most approved pattern.

DRAWING.

At present rooms in Thompson Hall are devoted to the use of the drawing department. For free-hand model-drawing and for mathematical drawing there is a good supply of geometric models; and for free-hand industrial drawing the nucleus of a good collection exists, consisting of plaster casts of historic ornament, details of human form and antique sculpture, as well as vases and common objects. The models for machine drawing are few, but various machines in other departments are available for this work.

There is the beginning of a good working library.

MUSEUM.

The museum had for a nucleus the collections made during the state geological survey. To this additions have been made from various sources. Many specimens are being collected to illustrate zoölogy, especially entomology.

LIBRARY.

The library of the college consists of ten thousand bound volumes and six thousand pamphlets. A large part of these are new and expensive books, making good working libraries for the different departments of instruction, including economic science and English and American literature.

Students also have the free use of the Durham public library of about eight thousand well selected volumes.

The college supports a reading-room, which is well supplied with the leading American and foreign periodicals.

FOUR YEARS' COURSES.

AGRICULTURAL COURSE.

This course is arranged especially for the general education and scientific training of students to fit them in various economic branches, such as agronomy, animal husbandry, biology, agricultural chemistry, entomology, forestry, horticulture, veterinary science, etc. Graduates are supposed to be qualified to take positions such as farm superintendents, foremen, stock raisers, dairy farmers, creamery managers, dairymen, superintendents of estates, parks or cemeteries, fruit-growers, gardeners, florists, nurserymen, landscape gardeners, foresters, poultrymen, ranchmen, etc.

It is expected that these same men will be equally prepared, depending upon individual tastes, to take positions as teachers and assistants in colleges and experiment stations.

The aim is to give a broad general foundation of pure and applied science. Laboratory methods are used in connection with lecture and recitation work. Seminary courses are also given, especially for seniors and advanced students.

BIOLOGICAL DIVISION OF THE AGRICULTURAL COURSE.

The biological division of the agricultural course is for the benefit of those students who desire to make a special study of some phase of natural history. It leads to such positions as teachers of botany and zoölogy in high schools and colleges, entomologists for experiment stations, state inspectors of nursery grounds, etc. During the first two years the student pursues the regular studies of the agricultural course, but in his junior year he begins to specialize in botany and zoölogy, a considerable proportion of his

time during the rest of his course being given to these subjects.

CHEMICAL DIVISION OF THE AGRICULTURAL COURSE.

The work of this division is especially intended to give a thorough grounding in the principles of chemistry as applied to agriculture and agricultural chemical analyses, and to train the student thoroughly in all kinds of manipulation required of the chemist in experiment stations, large dairy establishments, fertilizer works, etc.

Instruction is given mainly by personal supervision in the laboratory, accompanied by lectures, themes, recitations; and, as in the course in technical chemistry, the studies are arranged to meet the needs of the individual. Students wishing to take this course will elect, with the advice of the instructors in charge, seven hours per week of chemical work during the junior year, and eight hours per week during the senior year. Two years of German will be required, and French is recommended to be taken by students intending to enter the division.

COURSE IN MECHANICAL ENGINEERING.

Mechanical engineering is concerned with the design, construction, care, and operation of machinery.

The special studies are: mathematical, including a large amount of drawing; technical, pertaining directly to the professional work of the engineer; and general.

The study of the scientific principles underlying the work of the engineer is accompanied throughout the course by actual practice in mechanical operations and scientific research, by training in the use of tools for working wood and metals, and by experimental tests and demonstrations in the mechanical, chemical, and physical laboratories.

ELECTRICAL ENGINEERING COURSE.

The electrical engineering course is intended to meet the demands of a young man fitting himself for practical and

professional engineering, in connection with the various applications of electricity.

By means of lectures, recitations, and laboratory work, the subjects of the course are brought to the attention of the student in such a manner as to emphasize not only the present needs of the practitioner and engineer, but to give him the groundwork that will enable him to grasp and understand the constantly increasing number of problems that require solution.

The instruction aims to impart a complete practical and theoretical knowledge of the best modern types of electrical machines and appliances, and the methods of designing, building, and operating them.

The rapid progress in recent years in applying electricity to commercial uses, renders it difficult, if not impossible, for one without a technical education to gain prominence and be intrusted with its more responsible positions.

COURSE IN TECHNICAL CHEMISTRY.

This course is intended to fit for the career of a professional chemist or chemical engineer, and to give a good foundation for original and independent chemical research.

Instruction is imparted by lectures, recitations, and a large amount of carefully supervised laboratory work. The laboratory course is largely an individual one, and the work of each student is conducted with reference not only to the particular object he may have in view, but also to the acquirement of a broad knowledge of chemical science. The student is given a thorough training in German and French, to enable him to read with ease the chemical literature; a thorough grounding in mathematics, necessary for advanced theoretical chemistry or chemical engineering; a somewhat limited amount of special engineering work, both mechanical and electrical; and a thorough undergraduate training in theoretical and applied chemistry. He is encouraged to develop the power of solving chemical problems by independent thought through the aid of the refer-

ence works and chemical periodicals which the library contains. The large and well-furnished laboratories afford unusual facilities for chemical work.

GENERAL COURSE.

The general course in its original form was established in response to the demand that special provisions should be made for women. It has been broadened and improved by additional studies, and by an extensive scheme of elections, until in its present form it offers to either men or women "a liberal education upon a scientific basis."

MILITARY DEPARTMENT.

The United States government has furnished arms and equipment for two hundred men. The facilities for outdoor drill are unexcelled. Abundant ammunition is supplied by the federal government for target practice at the college rifle range. The battalion wears a neat cadet gray uniform, and is under the command of an officer of the regular army, detailed by the secretary of war.

The aim of the military department is to qualify graduates that they may have full practical knowledge not only of drilling but of supplying and handling a company in actual service.

REQUIREMENTS FOR ADMISSION TO FOUR YEARS' COURSES.

All candidates for admission to college must present satisfactory testimonials of good moral character.

Candidates for admission to the Freshman class must offer studies amounting to a total of fourteen units.

AGRICULTURAL COURSE.

Candidates for admission who intend to take the Agricultural Course must offer ten units from required subjects and four units from optional subjects, according to the following statement:

Required	Group A	.	.	.	.	.	.	3 units
"	" B	.	.	.	.	.	.	1 unit
"	" C	.	.	.	.	.	.	2 units
"	" D	.	.	(Physics and Botany)				2 "
"	" E	.	.	.	.	.	.	2 "
								10 units
(Optional)								4 "

GENERAL COURSE.

Candidates for admission who intend to take the General Course must offer ten units from required subjects and four units from optional subjects, according to the following statement :

[illegible]

ENGINEERING COURSES AND COURSE IN TECHNICAL

CHEMISTRY.

Required Group A	.	.	.	.	.	.	.	3 units
" " B	.	.	.	.	.	.	.	1 unit
" " C	.	.	.	.	.	.	.	3 units
" " D	.	.	.	.	.	(Physics)	.	1 unit
" " E	.	.	.	.	.	.	.	2 units
								<hr/>
								10 units
								(Optional) 4 units
								<hr/>
Total	.	.	.	.	.	.	.	14 units

GROUP A.

English.—The New England College Entrance Requirements in reading and study,—three periods a week for four years.

Reading and Practice. Each candidate will be required to present evidence of a general knowledge of the substance of the books mentioned below and to answer simple questions on the lives of their authors. The examination will usually be the writing of one or two paragraphs on each of several topics. The treatment of these topics is designed to test the power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In place of this test the candidate may present an exercise book, certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

In 1906, 1907, and 1908 it will be based upon: Shakespeare's *Macbeth* and *The Merchant of Venice*; The Sir Roger de Coverley Papers in *The Spectator*; Irving's *Life of Goldsmith*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe* and *The Lady of the Lake*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Lowell's *The Vision of Sir Launfal*; George Eliot's *Silas Marner*.

Study and Practice. This part of the examination presupposes a careful study of the works named below. The examination will be upon subject-matter, form, and struc-

ture; and will also test the candidate's ability to express his knowledge with clearness and accuracy.

In 1906, 1907, and 1908 it will be based upon: Shakespeare's Julius Cæsar; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's Speech on Conciliation with America; Macaulay's Essay on Milton and Life of Johnson.

— 3 units.

* GROUP B.

History of the United States.—Channing's Students' History of the United States, or an equivalent, with four hundred pages additional reading. Constitution of the United States. This is to represent not less than three exercises per week during one year of the high school course.

— 1 unit.

A combination of Ancient History and English History. The amount of Ancient History required is represented by Wolfesen's Essentials. The amount of English History required is represented by either Larned's or Montgomery's History of England.

— 1 unit.

History of Greece.—Myers' larger work, or an equivalent.

History of Rome to 1814.—An adequate preparation would be represented by Myers' Rome, its Rise and Fall, and Chapters I to VI, of Myers' Middle Ages; or by Allen's Roman People, and Emerton's Introduction to the Middle Ages.

— 1 unit.

GROUP C.

Algebra through quadratic equations, including radicals, and fractional and negative exponents, and Plane Geometry.

— 2 units.

SOLID GEOMETRY.

The equivalent of Wells' presentation.

— 1 unit.

*A candidate may present either the first and third or the first and second units of this group.

PLANE TRIGONOMETRY.

The equivalent of Wentworth's presentation.

— 1 unit.

GROUP D.

PHYSICS.

The preparation required for entrance in Physics shall be an equivalent of seventy-five class exercises, one hour each in length.

When certificates are offered, they should state the number of exercises and time allotted to each exercise.

— 1 unit.

BOTANY.

Gray's Lessons in Botany with a herbarium of fifty plants or Coulter's Plant Relations with laboratory work or an approved equivalent.

— 1 unit.

ZOOLOGY.

Davenport's Introduction or an approved equivalent.

— $\frac{1}{2}$ unit.

PHYSICAL GEOGRAPHY.

Davis' Elementary or an approved equivalent.

— $\frac{1}{2}$ unit.

GEOLOGY.

Leconte's Compend or an approved equivalent.

— $\frac{1}{2}$ unit.

CHEMISTRY.

Elementary Inorganic Chemistry equivalent to the work covered in Remsen's Briefer Course, Storer & Linday's Manual, Witham's Elements or Newell's Descriptive Chemistry, accompanied in each instance with laboratory practice.

— $\frac{1}{2}$ unit.

GROUP E.

It is expected that the student will give two years to the preparation of the language offered. The requirements are as follows:

In German the student will be held responsible for the conjugations of strong and weak verbs, the declensions of articles, nouns, adjectives, and pronouns, the elements of syntax, the uses of the modal auxiliaries, and the translation from English into German of simple connected passages based on one of the books read. More attention, however, is paid to the translation from German into idiomatic English. The student should read at least 200 pages of German prose. The following books are recommended:

1. Huss, German Reader (D. C. Heath & Co.); Andersen, Märchen; Brandt, German Reader; Lange's Beginners' German Book (Allyn & Bacon); Kaiser and Monteser's Brief German Course.

2. Hillern, Höher als die Kirche; Riehl, Der Fluch der Schönheit; Storm, Immensee; Gerstäcker, Irrfahrten; Heine, Die Harzreise; Freytag, Aus dem Staat Friedrichs des Grossen.

— 2 units.

In French the applicant is expected to be familiar with the whole subject of French grammar, and to be able to translate from English into French simple connected passages based on one of the books read. More attention, however, is paid to the translation from French into idiomatic English. The student should read at least four hundred pages. The following books are recommended:

1. Laboulaye, Contes Bleus (Heath); Colin, Contes et Saynètes (Ginn & Co.); Super, French Reader; Rollins, French Reader (Allyn & Bacon); Aldrich & Foster's French Reader (Ginn & Co.); Bruno's Le Tour de la France (American Book Co.).

2. Halévy, L'Abbé Constantin; Mérimée, Colomba; Ereckmann-Chatrian, Le Conscrit de 1813; Dumas, La Tulipe Noire; Daudet, La Belle Nivernaise; Berthet, Le Pacte de Famine; Sand, La Mare au Diable.

— 2 units.

GROUP F.

Students entering from approved schools may receive credit in their certificates for the following work in Latin or Greek.

LATIN.

Grammar and four books of Cæsar. Two years' work.

— 2 units.

Vergil, six books.

Cicero, six orations.

— 2 units.

GREEK.

Books I and II of Xenophon's Anabasis, Books III and IV of the Anabasis or their equivalent in other Attic prose, and 1,500 lines of Homer.

— 2 units.

A certificate from an approved academy or a high school will be accepted in place of an examination, upon any subject required for admission. Every certificate must state the amount of work done by the student, his proficiency, and the text-books used; and in case it is not evident that the student is thoroughly prepared, an examination will be required.

Certificate forms will be furnished upon application.

Candidates for advanced standing are also examined in the studies that have been pursued by the class which they propose to enter.

Examinations will be given, in the subjects presented for admission, on the Tuesday and Wednesday preceding the beginning of the college year. Candidates will present themselves with their credentials on the first day of the examination. See Calendar.

REQUIREMENTS FOR GRADUATION FROM FOUR YEARS' COURSES.

The degree of Bachelor of Science will be conferred upon those who complete a four years' course or its equivalent.

The regular work of the Senior class, including the regular final examinations, is completed at 4 p. m. on the Tuesday of the week preceding Commencement; and each member of the class may receive a statement of his standing at the office of the secretary of the faculty at 2 p. m. on the next day, Wednesday. All work required for graduation must be completed by 6 p. m. of the Saturday of the same week.

Each candidate for a degree must prepare a thesis on some subject relating to the studies he has taken.

DESCRIPTION OF STUDIES.

AGRICULTURE.

The rapid development of the science of agriculture has made it necessary to divide the subject into several distinct branches or subdivisions, and to give to each of these branches a definite name. Accordingly the various agricultural studies will be found grouped under the following heads: Agronomy, or technical agriculture; Zoötechny, or animal industry; Agrotechny, or dairying; Rural Engineering and Farm Economy.

AGRONOMY.

Agriculture 1. Principles of Agriculture.

Lectures and recitations upon the elementary principles of agriculture, including a study of the soil, the plant, and the animal, and the relations of each to the other. The course is given to the First Year Short Course Students only, and forms a basis for the succeeding courses.

Three exercises per week. F.

Agriculture 2. Farm Equipment.

Lectures and recitations upon the selection, planning, and equipment of farms; fences and fencing material; drains and drainage; farm wells; objects, methods, and implements of tillage; cattle ties, mangers, etc. Practical exercises in leveling and laying out of drains, and in the preparation of plans and maps of farms. For Agricultural Juniors and Second Year Short Course Students.

Three exercises per week. F.

Agriculture 3. Soil Physics.

Lectures and recitations upon the formation, kinds, and physical properties of soils; the movements and conservation of soil moisture; the relation of heat and air to soil; the nature and physical effects of tillage and fertilizers; laboratory work and

experimentation with soils to show the physical effects of different conditions and texture. For Agricultural Juniors and Second Year Short Course Students.

Three exercises per week. W.

Agriculture 4. Farm Crops.

Lectures and recitations upon the history, use, methods of culture, harvesting, storing and marketing of farm crops; practical work in judging and scoring the different varieties of grain, together with a study of growing and dried specimens of grasses, clover, rape, and other forage crops. For Agricultural Juniors and Second Year Short Course Students.

Three exercises per week. S.

Agriculture 5. Manures and Fertilizers.

The course will consist of lectures and recitations, with a brief review of the principles of plant nutrition. There will be considered in detail the constituents of farm manures and chemical fertilizers; care of manures; different methods of application, and the modifications required by different soils and crops. Elective for Agricultural Seniors; required for Second Year Short Course Students.

Three exercises per week. S.

Agriculture 6. Origin of Soils and Soil Management.

Lectures and recitations upon the origin, distribution, and classification of soils from a geological standpoint; their classification upon the basis of texture; soil maps and mapping; the improvement of soils by different methods of cultivation, drainage, rotation of crops, and green-manuring; the establishment and maintenance of good tilth. Laboratory experimentation. Elective for Agricultural Seniors.

Two exercises per week. W.

ZOOTECNHY, OR ANIMAL INDUSTRY.

Agriculture 18. Animal Husbandry.

This course consists of lectures and recitations upon the different breeds of live stock; the principles of stock breeding and feeding; the care and management of stock, and the raising of poultry. It is a general elementary course especially arranged for the Second Year Short Course Students.

Three exercises per week. F.

Agriculture 7. Breeds of Cattle.

Lectures and recitations upon the origin, history, characteristics, adaptability, and management of the different breeds of cattle.

A study of the beef breeds from the standpoint of the demands of the market; the methods of beef production and the preparation of cattle for sale and exhibition.

A study of the dairy breeds from the standpoint of the production of milk, butter, and the selection of individuals for the dairy herd. Practice in judging the different breeds.

For Agricultural Sophomores and Second Year Short Course Students.

Three exercises per week. F.

Agriculture 8. Breeds of Sheep and Swine.

Lectures and recitations upon the origin, history, characteristics, and adaptability of the different breeds; care and management of sheep under various conditions; different grades of wool, their uses and value; comparative quality and value of the different portions of the carcass; the raising of early lambs; care and management of swine; selection of breeding stock; preparation of swine for exhibition; influence of different kinds of food upon pork production. Practice in judging the different breeds.

For Agricultural Sophomores and Second Year Short Course Students.

Three exercises per week. W.

Agriculture 9. Breeds of Horses.

Lectures and recitations upon the origin, history, characteristics, adaptability, and management of the different breeds; classification, breeding, and preparation of the different classes for the market; training and the proper methods of harnessing and hitching. Practice in judging the different classes. For Agricultural Sophomores.

Three exercises per week. S.

Agriculture 10. Principles of Breeding.

Lectures and recitations upon the laws of heredity, its operation under various conditions; value of selection in improving and maintaining a high standard of excellence in farm stock; variation, its extent and cause; methods of breeding, including

a discussion of inbreeding, crossing, and grading. Practice will be given in tracing and writing pedigrees. For Agricultural Juniors.

Three exercises per week. W.

Agriculture 11. Veterinary Elements.

Lectures and recitations upon the construction and functions of the animal body; holding a post-mortem; simple farm medicines, modes of application; care of sick animals; breeding and some of its effects; common farm operations. For Agricultural Juniors and Second Year Short Course Students.

Four exercises per week. W.

Agriculture 12. Animal Diseases.

Lectures and recitations upon the common infectious and contagious diseases affecting farm animals; their causes and methods of treatment. For Agricultural Juniors and Second Year Short Course Students.

Three exercises per week. S.

Agriculture 13. Stock Feeding.

Lectures and recitations upon the laws of nutrition; composition and digestibility of feeding stuffs; influence of feed on the animal body; preservation and preparation of coarse fodders, ensilage; grinding, steaming, and cooking food. A study of the leading cereals and their by-products. Practice will be given in computing and compounding rations for various purposes. For Agricultural Juniors and Second Year Short Course Students.

Four exercises per week. S.

Agriculture 14. Animal Mechanics.

Lectures and recitations upon the principles of mechanics as applied to the animal machine; the proportions and conformation of horses for speed and for draft; modes of progression or the various gaits of the horse. Practical exercises in measuring animals and testing the value of given measurements for given purposes. Course to be given every other year, beginning with 1904. Elective for Agricultural Seniors.

Four exercises per week. F.

RURAL ENGINEERING AND FARM ECONOMY.

Agriculture 15. Agricultural Seminary.

This course consists of library and reference work, and a study of current agricultural literature. Each student will prepare during the term a certain number of abstracts, reports of papers upon topics relating to agriculture. For Agricultural Seniors.

Two exercises per week. F.

Agriculture 16. Rural Architecture and Farm Mechanics.

Lectures and recitations upon the principles of construction of farm buildings; barns and silos; construction and maintenance of country roads; principles of draft; farm motors and machinery. Practical work in testing and comparisons of various makes and kinds of farm machinery. For Agricultural Seniors.

Three exercises per week. S.

Agriculture 17. History of Agriculture and Rural Economics.

Lectures and recitations upon the history of agriculture from early Egyptian to modern American; present agricultural methods and systems in various countries; cost and relative profits of the different systems of farm operations in the United States. For Agricultural Seniors.

Three exercises per week. S.

BOTANY.

1. Ecology.

Recitation and laboratory work on the adaptations of plants to their environments. For First Year Short Course Students.

Three exercises per week. F.

2. Structural and Physiological Botany.

Recitations and laboratory work. For First Year Short Course Students.

Two exercises per week. W.

3. Structural Botany.

For agricultural and general Freshmen and first year short course men. Open to students who present entrance Botany or have completed courses 1 and 2.

Three exercises per week. S.

4. Plant Diseases.

A study by means of lectures and laboratory work of some of the more important fungous and other diseases of plants and the means of preventing their injuries. For Agricultural Sophomores and Second Year Short Course Students.

Two exercises per week. F.

5. Advanced Systematic Botany.

A study of some group of plants in the local flora involving laboratory and field work. For Agricultural and General Seniors. Open to those who have completed Course 3.

Three exercises per week. F.

6. Advanced Botany.

Courses 6 and 7 consist of special advanced work arranged to suit the needs of individual students. For Agricultural and General Seniors. Open to those who have completed Course 3.

Three exercises per week. W.

7. Advanced Botany.

For Agricultural and General Seniors.

Three exercises per week. S.

CHEMISTRY.

1. Inorganic Chemistry.

Lectures and recitations on general and theoretical chemistry, illustrated by experiments, charts, specimens, lantern views, etc. Solutions of chemical problems will be required. Required of all Freshmen.

Three exercises per week. F.

2. Inorganic Chemistry.

Course 2 is a continuation of Course 1, but the time will be mainly spent on the metallic elements, their metallurgy, salts, etc.

Open only to students who have completed Course 1.

Three exercises per week. W.

3. Organic Chemistry.

Course 3 will consist of lectures and recitations on the chemistry of the carbon compounds, together with the study of their properties. For Agricultural and Chemical Freshmen. Elective for General Freshmen.

Open only to students who have completed Courses 1 and 2.

Three exercises per week. S.

4. Qualitative Chemical Analysis.

Course 4 consists of laboratory practice, with occasional lectures. The student is expected to become proficient in the separation and detection of the common acids and bases, and to keep a full set of notes. He will have practice in the writing of reactions, and will fill out numerous slips containing questions bearing upon his work. For Chemical Sophomores.

Agricultural and General Sophomores, three exercises per week F. and W.

Open only to students who have completed Course 1.

Five exercises per week. F.

5. Qualitative Chemical Analysis.

A shorter course arranged especially for Engineering Sophomores.

Open only to engineering students who have completed Course 1.

Two exercises per week. F. and W.

6. Chemistry of Plant Growth.

The composition of plants at different stages of growth and the conditions necessary for their development. This subject

must be preceded by Chemistry Courses 1, 2, and 3. For Agricultural and Chemical Sophomores; elective for General Juniors.

Three exercises per week. F.

7. Chemistry of Food and Nutrition.

These subjects include the composition of foods and the animal body; the assimilation of the former by the latter, and the principles underlying a rational diet. This subject should be preceded by Course 6. For Agricultural and Chemical Sophomores; elective for General Juniors.

Two exercises per week. W.

8. Organic Reactions.

Recitations and laboratory practice on qualitative organic analysis and reactions. For Chemical Sophomores.

Open only to students who have completed Course 3.

Two exercises per week. S.

9. Organic Chemistry.

Course 9, for Juniors in the Chemical Division of the Agricultural Course, and in the Technical Chemistry Course, consists of laboratory practice by the students in preparing and purifying products relating to their respective lines of work.

Open only to students who have completed Course 3.

Two exercises per week. F.

10. Quantitative Analysis.

A preliminary course in quantitative analysis to familiarize the student with the general methods of chemical manipulation. For Chemical Sophomores. Elective in the general course in Sophomore, Junior, and Senior years.

Open only to students who have completed Chemistry 4.

Seventy exercises. Number per week varies with course.

11. Advanced Quantitative Analysis.

Course 11 is arranged for students of the Chemical Courses, and is intended to fit them for work in the laboratories of agri-

cultural experiment stations, fertilizer works, iron works, sugar refineries, etc., and for the duties of the public analyst. This course will be made to fit the end which each has in view, and will be largely an individual one. For those students in the Chemical Division of the Agricultural Course the analyses made will tend in the main toward agricultural products, fertilizers, mucks, marls, manures, dairy products, waters, foodstuffs, sugars, etc. For the student wishing to enter metallurgical works, the analyses will be in the main upon iron, steel, and other metals, ores, limestones, slags, alloys, fuels, etc. As a preparation for the study of medicine, work will be done on poisons, foods, drugs, urine, etc. Other lines will be arranged to meet the wants of the individual student. Each student will be given some practice in all of the branches of agricultural, metallurgical, medical, sanitary, and industrial chemistry, in order to lay a foundation for any future work which may be required of him. A short course in gas and oil analysis will also be provided. For Chemical and General students.

Open only to students who have completed Course 10.

Number and time of exercises varies with the course.

12. Chemical Journals, Methods, etc.

The work consists of the study of current chemical literature, which is mainly in the German language, with recitations once a week throughout the year. Each student will be expected to prepare abstracts, reports, criticisms, etc., upon assigned articles. For Chemical Seniors.

Open to students who have begun Course 11.

One exercise per week through the year.

13. Industrial Chemistry.

Course 13 consists of lectures on chemical manufactures, such as sugar, sodium carbonate, fertilizers, sulphuric acid, glass, matches, paints, dyes, soaps, illuminating gas, petroleum, etc. The lectures will be illustrated by lantern views; and trips to the leading New England cities, to examine important chemical manufactures, will be taken as far as practicable. For Chemical Juniors.

Open only to those who have completed Courses 1 and 2.

Two exercises per week. W.

14. Metallurgy.

Course 14 consists of lectures describing the processes employed in the smelting of the ores of iron, lead, copper, zinc, silver, gold, etc., and upon the methods used in refining these metals. The lectures are illustrated by stereopticon and by specimens of metallurgical products. For Chemical Juniors.

Open only to those who have completed Courses 1 and 2.

Two exercises per week. S.

15. Physical Chemistry, Lectures.

The work consists of advanced study of chemical theory. Practical experiments will be performed, with the aid of the student in the determination of vapor density, molecular weights, specific heat, etc.; and the study of isomorphism, diffusion of gases, solutions, ionization, electrolysis, molecular, and atomic volume, thermo chemistry, equilibrium, the phase rule, etc., will take up much of the time.

Course 15 comes in alternate years with Course 13, and is open to students who have completed Courses 1, 2, and 11.

Three exercises per week. W.

16. Physical Chemistry, Lectures.

A continuation of Course 15, and is given in alternate years with Course 14.

Two exercises per week. S.

17. Agricultural Analysis.

This course is arranged especially for students of the Agricultural Course, and consists mainly of the quantitative determination of the constituents of milk, butter, fertilizers, grain, etc.

Open only to students who have completed creditably the work of Courses 1, 2, 3, and 4 or 5.

Three exercises per week through the year.

18. Metallurgical Analysis.

This course is arranged for the students of the engineering departments who may elect the same, and consists mainly of the

quantitative determination of ores, slags, metals, alloys, fuels, etc.

Open only to students who have completed creditably the work of Courses 1, 2, 3, and 4 or 5.

Three exercises per week through the year.

19. Assaying.

Ten exercises.

A course in the fire assay of gold and silver ores.

Open only to students who have taken Courses 10 or 18.

20. Thesis.

The work of the last two terms of the Technical Chemistry Course is given up to the special study of some selected subject in any branch of chemical science, and the student is required to present a thesis showing him to be capable of independence of thought.

21. Chemical Research.

Especially arranged for students of the Course in Technical Chemistry who are in advance of their course.

DAIRYING.

1. Milk and Milk Testing.

Lectures and recitations on the secretion, nature, and composition of milk, its uses and value as an article of food. The causes and conditions influencing the quality of milk and the care of milk on the farm. The principles of the Babcock test and its application on the dairy farm, and in the creamery or milk inspector's laboratory. Under the guidance of the instructor the student will practice testing milk and its products until competent to perform the work. In connection with the lactometer the test will be made the subject of practice in estimating milk solids. For Agricultural Juniors.

Five exercises per week. F.

2. Dairy Bacteriology.

Lectures, recitations, and demonstrations covering the more important facts in the relation of bacteria to dairying. Instruc-

tion and practice in pasteurizing milk and cream for market and for butter-making; also in making and using starters, and ripening cream. For Agricultural Juniors and students in ten weeks' course in Dairying.

Two exercises per week. W.

3. Dairy Machinery.

Lectures on the construction, operation, and care of dairy and creamery appliances. Each student is required to take apart and assemble leading makes of cream separators and to operate them carefully and efficiently, and present a written description of each, with a record of capacity and efficiency under his management. For Agricultural Juniors.

Open to those who have completed Course 1.

Three exercises per week. S.

4. Butter-making.

Text-book study, recitations, and lectures are supplemented by practice in the creamery. The student is trained to perform all parts of the work and to understand thoroughly the details which make possible the production of fine butter. For Agricultural Seniors.

Open to those who have completed Course 1.

Three exercises per week. F.

5. Cheese-making.

A course of lectures will be given covering the details of manufacture, curing, and marketing of the more important kinds of cheese. The course will cover work done in European countries as well as that done in Canada and the United States. For Agricultural Seniors.

Three exercises per week. W.

6. Creamery and Dairy Management.

Students are taught the method of keeping creamery and dairy accounts, and will be required to present sample accounts covering a period of one month. Plans of dairy buildings, creameries, and cheese factories are also required, with estimates for building and equipment. For Agricultural Seniors.

Open to those who have completed Courses 1-4.

Three exercises per week. S.

7. Milk and Milk Testing.

The same as Course 1. For First Year Two-year Students.

Five exercises per week. S.

8. Practical Work.

For students in ten weeks' course in Dairying.

Five exercises per week. W.

9. Dairy Machinery.

Lectures on the construction, operation, and care of dairy and creamery appliances. For students in the ten weeks' course in Dairying.

One exercise per week. W.

10. Butter-making.

Text-book study, recitations, and lectures. For students in the ten weeks' course in Dairying.

One exercise per week. W.

DRAWING.*

These courses are of an industrial nature and include both free-hand and mathematical branches of this subject. They aim to cultivate accurate observation, careful thinking in applying the underlying theories, and manual dexterity in making the graphic records. The immense value of drawing as a means of expression is coming to be more and more fully recognized.

The work of the first two terms is required of all regular students in four years' courses.

The advanced mathematical and machine drawing is prescribed for engineering courses.

The advanced free-hand drawing is elective, and may be taken only by those with adequate preparation.

*Do not purchase drawing instruments or materials until you have consulted the instructor as to what is necessary. Students intending to take an engineering course should purchase high grade instruments.

1. Industrial Drawing.

Free-hand lettering, elementary free-hand industrial drawing.
For all Freshmen.

Two exercises per week. F.

2. Industrial Drawing.

Use of instruments. Mathematical drawing. For all Freshmen.

Two and one half exercises per week. W.

Note.—Alternating with Shop-work on Wednesdays.

3. Industrial Drawing.

Mathematical drawing, working drawings, tracings, blue prints.
For Engineering and Chemical Freshmen.

Three exercises per week. S.

4. Orthographic Projection.

Drawing exercises in practice of this method of representation.
For Engineering and Chemical Sophomores.

Two exercises per week. F.

5. Descriptive Geometry.

Recitations and drawing exercises in the solution of problems in plane and solid geometry, by means of orthographic projections, including shades, shadows, and perspective. For Engineering Sophomores.

Two exercises per week. W.

6. Continuation of 5.

Five exercises per week. S.

7. Continuation of 6.

For Engineering Juniors.

Two exercises per week. F.

5, 6, and 7 are open only to those who have passed Mathematics 2.

8. Technical Drawing.

Drawing exercises on making "working drawings," and study of details of drafting-room practice. For Engineering Juniors.

Two exercises per week. W.

9. Continuation of 8.

Two exercises per week. S.

10. Continuation of 9.

For Mechanical Engineering Seniors.

Three exercises per week. F.

11. Industrial Drawing.

Light and shade drawing from the cast and from still life; pencil sketching; details of building construction; projection drawing; perspective. For General Course Sophomores.

Two exercises per week. W.

12. Continuation of 11.

Three exercises per week. S.

13. Industrial Drawing.

Study of architectural detail; use of color; pencil sketching; perspective; historic ornament. For General Course Juniors.

Three exercises per week. F.

14. Continuation of 13.

Two exercises per week. W.

15. Continuation of 14.

Three exercises per week. S.

16. Drawing and History of Painting.

Antique figure from casts, pencil sketching, charcoal drawing, use of water colors; study of the history of painting. For General Course Seniors.

Three exercises per week. F.

17. Continuation of 16.

Three exercises per week. W.

18. Continuation of 17.

Three exercises per week. S.

Subjects in Nos. 11 to 18 inclusive are elective in the General Course.

ELECTRICAL ENGINEERING.

1. Direct Currents and Direct Current Dynamos.

Engineering Juniors, *three exercises per week. F.*

This course is taken up upon completion of physics 5, and begins with the study of the magnetic field produced by permanent and electro magnets, the different forms of field magnets, the physical theory of the dynamo, and the calculations of the magnetic circuit. The next items are the choice of insulating materials and the copper for the coils, the consideration of armature reactions, and the theory of commutation. Upon completion of the text on characteristic curves, a very thorough test is made of an Edison 3 K-W compound dynamo to determine its series—shunt and compound characteristics.

The text-book used in Courses 1 to 3 is S. P. Thompson's *Dynamo Electric Machinery*, Vol. I, Direct Currents.

2. Direct Current Dynamos and Motors.

Engineering Juniors, second term, *three exercises per week. W.*

The following subjects are taken up this term: The theory of armature winding and construction; mechanical points of design and construction; the various losses; and the design of closed coil types of dynamos.

3. Direct Current Dynamos and Motors.—A continuation of Course 2.

Engineering Juniors, first five weeks, *three exercises per week. S.*

Upon completion of Course 2, a study is made of arc lighting dynamos, machines for special purposes, direct current motors and their design, regulators, controllers, and the management of dynamos and motors.

4. Theoretical Electricity.

Electrical Engineering Juniors, first term, *three exercises per week. F.*

This course begins with the study of the fundamental and derived units, the latter of which include the electrostatic, the electromagnetic, and practical systems, and their conversion factors. The general theorems of the electrostatic field are devel-

oped mathematically, the laws are stated, and practical application is made of them in the design of commercial apparatus.

Following this part of the subject, a study is made of magnetism, and the magnetic field due to magnets, magnetic shells, and circuits traversed by electric currents.

The equivalence of magnetic shells and voltaic circuits is considered with regard to its important application in galvanometers, voltmeters, etc. The theory of measuring instruments of different types is studied in detail.

5. Theoretical Electricity.

Electrical Engineering Juniors, *three exercises per week. W.*

This is a continuation of Course 4. The laws of series and parallel circuits, the laboratory methods of measuring the various electrical quantities, such as electromotive forces, resistances, capacities, permeability of iron, etc., the methods of standardizing instruments, the laws of electrolysis, etc., constitute the subjects taken up in Courses 5 and 6.

A large number of examples from Hooper and Wells' "Electrical Problems" are solved as a part of Courses 5 and 6. The text used is S. P. Thompson's "Elementary Lessons in Electricity and Magnetism," accompanied by notes based upon the work of Maxwell, Gray, J. J. Thomson, Gerard, Entage, Nipher, Foster, Jackson, and others.

6. Theoretical Electricity Alternating Currents.

Electrical Engineering Juniors, *six exercises per week. S.*

This course begins with the study of the properties of periodic curves, the average and virtual values of the ordinates of sine curves, followed by the development of general expressions for the instantaneous electromotive force impressed upon, and the energy spent in a series circuit, containing resistance R , self-induction L , and capacity S , in terms of their components.

The phase relations of these component quantities are studied by plotting curves for a typical circuit of assumed data.

D. C. Jackson's "Alternating Currents and Alternating Current Machinery" is the text upon which Courses 6, 7, 8, and 9 are based.

7. Theoretical Electricity.—"Alternating Currents and Alternating Current Machinery."

Electrical Engineering Seniors, first term, *five exercises per week. F.*

Considerable time is spent in getting a correct knowledge of typical series and parallel circuits containing inductive and condenser reactances.

The solution of problems by the analytical and graphical methods, the methods of measuring inductances, power, etc., the magnetic circuit of alternators, the regulation efficiencies, and losses of machines of different types receive due attention.

8. Theoretical Electricity.—“Alternating Currents and Alternating Current Machinery.”

Electrical Engineering Seniors, *five exercises per week. W.*

A detailed study of the transformer is made and formulæ of design are developed, which enable its operation to be predicted under various conditions. Jackson's text is used, in addition to notes from Bedell's and Fleming's works on the transformer.

This is followed by the study of Polyphase Electric Currents and Machinery, in which S. P. Thompson's book is used in class, along with that portion of Jackson's work on the same subject.

9. Alternating Current Phenomena.

Electrical Engineering Seniors, *three exercises per week. S.*
Steinmetz's text is used in class.

Electrical Engineering 10 to 18 are taken by Seniors of the Electrical Engineering Course.

10. The Telephone.

First term, *three exercises per week for six weeks. F.*

A course of lectures and recitations on the acoustic and electrical principles of telephony, the different forms of calling and receiving apparatus and accessories, and simple circuits constitute the introduction to the course. This is followed by a consideration of the more complex forms of circuits, exchange switchboards, transfer systems, and the construction of overhead and underground systems.

Kempster B. Miller's "American Telephone Practice" is used as a text.

11. The Telegraph.

Three exercises per week for six weeks. F.

The work of this course consists of a careful study of the elementary electrical principles of telegraphy, the construction and

connection of lines, repeaters, high speed telegraphy, simple and multiplex telegraphy, submarine signalling, automatic devices, general electric signalling for purposes of alarms, railroads, etc., and wireless telegraphy.

The text used is Maver's "American Telegraphy."

12. Storage Batteries.

Three exercises per week the last three weeks. F.

This is a course of lectures, discussing the different types of cells, charging, discharging, their care and management, their commercial application for keeping the voltage constant at feeding centers, etc., and as sources of constant potential for laboratories.

Notes and references are used by the class.

13. Electric Lighting.

Three exercises per week. W.

This course covers such subjects as general electrical distributions for series and parallel systems, the development of wiring formulæ, the calculation of size of feeders and mains, the regulation of feeder voltages, two and three wire systems, overhead and underground conductors, a detailed study of the arc and incandescent lamps, alternating current systems of distribution by transformers, etc.

Crocker's "Electric Lighting," Vol. II, is used as a text.

14. Power Distribution for Electric Railroads.

Three exercises per week. W.

The chief items considered are the location of the power station as determined by economical questions, the fluctuations of load and their nature and magnitude, feeding and return systems, boosters, substations, fast and heavy railway service, alternating current motors for railroads, car equipment, controllers, safety devices, line and track construction, operation and maintenance. In connection with this course several exercises are devoted to electricity in mining.

The text used is Bell's "Power Distribution for Electric Railroads."

15. Electrical Laboratory.

Two exercises per week. F.

Courses 15, 16, and 17 are consecutive, and consist in the measurement of resistances, inductances, the calibration of a bal-

listic galvanometer and Ryan electrometer, the permeabilities of samples of iron. Tests are made on a small dynamo, connected to run as a direct current series, a shunt, or a compound motor to determine the speed, torque, current, output, and efficiency curves of motors. The determination of the candle power of incandescent and arc lamps, the calibration of resistances, the measurement of power in alternating current circuits, alternator characteristics, the running of synchronous motors, the load curves of a transformer, power measurement by a wattmeter, and the study of polyphase machinery constitute the remainder of the course.

The laboratory manual used is Swenson and Frankenfield's "Testing of Electro Magnetic Machinery."

16. Electrical Laboratory.

Two exercises per week. W.

17. Electrical Laboratory.

Two exercises per week. S.

18. Thesis.

Three exercises per week. S.

19. Alternating Currents.

Three exercises per week for five weeks. S.

This is a brief course taken by Juniors of the Mechanical Engineering Course upon completion of Courses 1, 2, and 3. The text-book used is Franklin and Williamson's "Alternating Currents."

20. Alternating Currents.

Three exercises per week for the first eight weeks. F.

This is a continuation of Course 19 and is taken by Seniors of the Mechanical Engineering Course.

21. Applications of Electricity.

Three exercises per week for the last seven weeks. F.

This is a course of lectures on the telephone, telegraph, storage batteries, electric lighting, and electric railroads, and is given to Seniors of the Mechanical Engineering Course upon completion of Courses 19 and 20.

Courses 22 and 23 are taken by Technical Chemistry Seniors.

22. Industrial Electricity.

Three exercises per week. F.

The principles and methods employed in electrical measurements, such as resistance of wires and batteries, e. m. f. of cells, current measurement by ammeters and electrolysis, the use of the voltmeter, etc., will be carefully considered. A brief study will be made of the dynamo, motor, transformer, primary and secondary batteries, arc and incandescent lamps, and the general principles of electrical distribution.

23. Industrial Electricity.

Three exercises per week. W.

This is a continuation of Course 22. Slingo and Brooker's "Electrical Engineering" is used as a text-book in Courses 22 and 23.

 ENGLISH.

Required of all Freshmen.

1. Rhetoric and Composition.

Two exercises per week. F.

2. Rhetoric and Composition.

Two exercises per week. W.

3. Rhetoric and Composition.

*One exercise per week. S.*4. Chaucer to Wordsworth. Lectures and Readings.
Open to Juniors.*Two exercises per week. W.*5. Wordsworth to Browning. Lectures and Readings.
Open to General and Agricultural Juniors and Chemical Seniors.*Two exercises per week. S.*

6. Literary Criticism.

Recitations, readings, and a thesis. Open to Seniors.

Two exercises per week. F.

7. Course in Debating.

One exercise per week. W. or S.

8. American Literature.

For Agricultural and General Seniors.

Three exercises per week. W.

9. American Literature.

A continuation of 8.

Three exercises per week. S.

10. Grammar and Elementary Composition.

For First Year Short Course Students.

Five exercises per week. F.

11. Rhetoric.

Two exercises per week. W.

12. Rhetoric.

One exercise per week. S.

Students in the two years' course showing ability to carry the work are given Courses 1, 2, and 3, instead of 10, 11, and 12.

FORESTRY.

1. Arboriculture and Forestry.

This course is intended to give the student a knowledge of the various methods of forestry management in Europe and America. The text and lectures will cover the use of trees for shelter, shade, and ornament, and their propagation; value of trees for timber; how to improve existing woodlands; influence of forests upon soils, crops, and climate; establishment and management of plantations of forest trees.

For Agricultural Juniors.

Three exercises per week. W.

2. Forest Technology.

This course aims to give the student advanced theoretical and practical work in establishing, improving, and managing woodlands; estimating and measuring standing timber, and harvesting forest products. The physical properties of woods and forest

botany and entomology are here further considered. Seminary and laboratory work.

Elective for Agricultural Seniors.

Three exercises per week. F.

3. Forest Economics.

This course is special and offered only to students who have shown marked proficiency in Forestry 1 and 2. Climatic influences; soil and crop production; forest administration, forest laws and forest policies; forest distribution; and forest utilization.

Elective for Agricultural Seniors.

Three exercises per week. S.

FRENCH.

Courses 1, 2, and 3 are taken in Freshman year by students who offer German for admission.

1. Essentials of French Grammar and reading with practice in speaking and writing French. Dictation.

Three exercises per week. F.

2. Grammar continued. Simple stories, committing of poems to memory. Dictation.

Three exercises per week. W.

3. Reading of Modern French Prose, translation from English into French of connected narrative. Dictation.

Three exercises per week. S.

4. Reading and translation of Scientific French, Composition, Poems.

Three exercises per week. F.

5. Reading, Translation, and Composition continued.

Three exercises per week. W.

6. French Prose, History, and Travel; Composition based on some book read in class.

Three exercises per week. S.

7. French Prose, Sight Reading.

Hugo, Balzac, Sand.

Three exercises per week. F.

8. Classical French.

Corneille, Racine, and Molière.

Three exercises per week. W.

9. General Review of French Literature. Outside reading; sight work.

Three exercises per week. S.

GEOLOGY.

1. Mineralogy.

A short course in blowpipe analysis, followed by laboratory practice in the determination and study of minerals, with special reference to their economic value. For Chemical Sophomores and Engineering, General, and Agricultural Juniors.

Course 1 is open only to those who have taken Chemistry 1 and 2.

Three exercises per week. S.

2. Elementary Geology.

A brief course in the elements of Geology. Special attention is given to local geology and excursions are made to various points of interest in the vicinity. For Agricultural and General Juniors.

Open to those who have completed Zoology 1, 2, and 3, and Chemistry 1 and 2.

Four exercises per week. F.

GERMAN.

Courses 1, 2, and 3 are taken in Freshman year by students who offer French for admission. Courses 4, 5, and 6 are taken by all Sophomores.

1. German Grammar. Declension of articles, nouns, adjectives, and pronouns; verbs, weak and strong. Reading of simple stories; conversation. Dictation.

Three exercises per week. F.

2. Verbs, modal auxiliaries, essentials of syntax. Composition, Reading, and Translation; Poems. Dictation.

Three exercises per week. W.

3. Reading, Translation, and Composition; Sight Translation. Dictation.

Three exercises per week. S.

4. German Prose of the Nineteenth Century. Composition based on some book read in class.

Three exercises per week. F

5. German Prose of the Nineteenth Century continued. Composition, outside reading.

Three exercises per week. W.

6. Easier works of Lessing and Schiller. Composition.

Three exercises per week. S.

7. Masterpieces of German Literature. Lessing and Schiller.

Three exercises per week. F.

8. Goethe. German Ballads and Lyrics.

Three exercises per week. W.

9. General review of German Literature, outside reading.

Three exercises per week. S.

10, 11, and 12. Goethe and his contemporaries. Given in 1904-1905.

The aim throughout the courses in French and German is to train the students to make practical use of these languages. Considerable stress is laid, therefore, on reading aloud, dictation, and paraphrasing the assigned texts.

HISTORY.

In the courses in history an important place is given to historical reading carried on in the reference room. In some cases a considerable part of the work is written.

Courses 1 to 3 and Courses 4 to 6 are given on alternate years, Courses 4 to 6 being offered in 1905-'06.

Courses 1 to 6 are open only to those who have passed in Grecian and Roman History.

Courses 7 to 9 are open only to those who have passed in History and Constitution of the United States.

For General Course Freshmen and Sophomores.

Three or four exercises per week. F.

1. History of Europe from 814 to 1492. Recitations and collateral reading.

2. History of Europe from 1492 to 1598. Recitations and collateral reading.

For General Course Freshmen and Sophomores.

Three exercises per week. W.

3. History of Europe from 1598 to 1715. Recitations and collateral reading.

For General Course Freshmen and Sophomores.

Three or four exercises per week. S.

4. History of Europe from 1715 to 1789. Europe at the beginning of the French Revolution. Recitations and collateral reading.

For General Course Freshmen and Sophomores.

Three or four exercises per week. F.

5. History of Europe from 1789 to 1815. The French Revolution. Recitations and collateral reading.

For General Course Freshmen and Sophomores.

Three exercises per week. W.

6. History of Europe since 1815. Recitations and collateral reading.

For General Course Freshmen and Sophomores.

Three exercises per week. S.

In 1904-1905 Courses 10, 11, and 12 will be given instead of 7, 8, and 9. Open to Juniors and Seniors.

Three exercises per week. F., W., and S.

7. Political and Constitutional History of the United States from 1783 to 1840.

For General Course Juniors and Agricultural Seniors.

Four exercises per week. F.

8. Political and Constitutional History of the United States from 1840 to 1865.

For General Course Juniors and Agricultural Seniors.

Three exercises per week, W.

9. Political and Constitutional History of the United States since 1865.

For General Course Juniors and Agricultural Seniors.

Two exercises per week. S.

HORTICULTURE.

With the rapid development of agricultural education, the science of horticulture has become more clearly defined. Horticulture is sub-divided into four classes, viz.: (1) Pomology; or fruit growing; (2) Olericulture, or vegetable gardening; (3) Floriculture, or flower growing; and (4) Landscape Gardening.

1. Principles of Horticulture.

This course is elementary, and comprises the fundamentals of horticulture, emphasizing the sciences upon which horticulture rests, and the scope and importance of its field.

For Agricultural Freshmen.

Three exercises per week. S.

2. Olericulture.

Lectures and recitations upon the culture, classification, and identification of vegetables. The storing and marketing of vegetables is also considered. This course is given as a laboratory course of fifteen exercises in the fall term for the study and identification of varieties, and in the spring term twenty exercises are given to complete the course.

For Agricultural Sophomores.

Open only to those who have completed Botany 3 and are taking Botany 4.

3. Greenhouse Management.

Lectures, recitations, and laboratory work. This course aims to familiarize the student with modern methods of greenhouse work, and the more important plants grown under glass. Soils, varieties, culture, marketing, enemies, etc., are studied. Each student is required to do practical work in propagating, potting, watering, ventilating, etc. A study of the history and development of different types of greenhouses, including methods of heating and general management.

For Agricultural Sophomores and first year two-year men.

Three exercises per week. W.

4. Pomology and Viticulture.

The culture, classification, and identification of our leading commercial fruits are taken up for study in this course, the object being to familiarize the student with modern fruit growing, both the large or orchard fruits and the small or berry fruits. Lectures, recitations, and laboratory work.

For Agricultural Juniors and second year two-year men.

Open only to those having completed Botany 1 and Zoology 3.

Three exercises per week. F.

5. Floriculture and Home Decoration.

Lectures, recitations, and laboratory work. The culture and uses of ornamental plants are studied together with their history, classification, characteristics, propagation, and uses on private and public grounds.

For Agricultural Juniors and second year two-year men.

Open only to those who have completed Horticulture 3.

Three exercises per week. S.

6. Plant Breeding.

This course takes up the evolutionary study of plant life and points out through examples, largely of economic horticultural plants, their modification and improvement by mutation, crossing, dwarfing, forcing, etc. Recitations and seminary work.

For Agricultural Seniors.

Three exercises per week. W.

7. Landscape Gardening.

Lectures, recitations, and laboratory work on the principles of æsthetics as applied to natural scenery; designing, mapping, staking out, and planting private and public grounds, parks, cemeteries, etc., are studied and practised.

Courses Horticulture 3 and 5 must precede this course.

Three exercises per week. W.

8. Horticultural Seminary.

This course consists of the study of current horticultural literature and various advanced horticultural problems.

For Agricultural Seniors.

Two exercises per week. S.

MATHEMATICS.

1. Algebra completed.

For all Freshmen.

Five exercises per week. F.

2. Solid Geometry, with advanced course.

For Freshmen entering without the subject.

Three exercises per week. F.

3. Plane and Spherical Trigonometry.

For all Freshmen.

Four exercises per week. W.

4. Surveying.

Recitations, field-work, and plotting, including compass, transit, plane-table, and level work. Required of Engineering, Chemical, and Agricultural Freshmen. Elective for General Course Freshmen.

5. Analytic Geometry.

For Engineering and Chemical Sophomores. Elective for General Course Sophomores.

Five exercises per week. F.

6. Differential Calculus.

For Engineering and Chemical Sophomores. Elective for General Course Sophomores.

Five exercises per week. W.

7. Integral Calculus.

For Engineering and Chemical Sophomores.

Five exercises per week. S.

8. Differential Equations.

For General Juniors.

Two exercises per week. F.

9. Quaternions.

For General Juniors.

Two exercises per week. W.

10. Astronomy.

For General Juniors.

Four exercises per week. W.

11. Roads, Streets, and Pavements.

Recitations and lectures on construction and maintenance of paved, macadamized, and gravel roads, with discussion of laws relating thereto. For Agricultural Seniors.

Three exercises per week. S.

12.

For first year short course students.

Three exercises per week. F.

13. Continuation of 12.

Three exercises per week. W.

METEOROLOGY.

1. Meteorology.

Recitations and lectures on wind systems, precipitation, humidity, laws of storms and tornadoes, and methods of prediction of atmospheric changes. For Agricultural and General Seniors.

Three exercises per week. S.

MECHANICAL ENGINEERING.

1. Mechanism.

Recitations and exercises in drawing outlines of elementary combinations of parts of machines, with special reference to the relative motion of the parts, their forms, and modes of connection. For Engineering Sophomores.

Two exercises per week. F.

2. Mechanism.

Continuation of 1.

Two exercises per week. W.

3. Mechanism.

Continuation of 1 and 2.

Two exercises per week. S.

4. Mechanics of Engineering.

Courses 4, 5, and 6 are devoted to recitations in statics and dynamics. For Engineering and Chemical Juniors.

Courses 4 to 6 are open only to those who have taken Mathematics 1 to 7, inclusive.

Two exercises per week. F.

5. Mechanics of Engineering.

Four exercises per week. W.

6. Mechanics of Engineering.

Four exercises per week. S.

7. Graphic Statics.

For Engineering and Chemical Juniors.

Two exercises per week. F.

8. Steam Engineering.

Recitations and lectures on thermodynamics, boilers, and valve gears. For Engineering Juniors.

Four exercises per week. F.

Course 8 is open only to those who have taken Courses 4 and 5, and Physics 1 and 2.

9. Steam Engineering.

Continuation of Course 8.

Three exercises per week. W.

10. Steam Engineering.

Continuation of Courses 8 and 9.

Four exercises per week. S

11. Materials of Construction.

Recitations on the production, properties, uses, and preservation of engineering materials. For Engineering Seniors.

Continuation of Courses 4-6.

Four exercises per week. F.

Course 4 is open only to those who have taken Courses 4, 5, and 6, and Chemistry 2.

12. Hydraulics.

For Engineering Seniors.

Open only to those who have taken Courses 4 to 6 and 8 to 10.

Three exercises per week. F.

13. Hydraulic Motors.

For Mechanical Engineering Seniors.

Course 13 is open only to those who have taken Course 12.

Three exercises per week. W.

14. Mechanical Laboratory.

Tests of materials, boilers, engines, pumps, indicators, etc. For Engineering Seniors.

Course 14 is open only to those who have taken Courses 1 to 12.

Two exercises per week. F.

15. Mechanical Laboratory.

Continuation of Course 14.

Three exercises per week. W.

16. Mechanical Laboratory.

Continuation of Courses 14 and 15.

Two exercises per week. S.

17. Multiple Expansion Engines.

For Engineering Seniors.

Three exercises per week. W.

18. Gas and Hot Air Engines and Refrigerating Machinery.

For Engineering Seniors.

Three exercises per week. S.

19. Machine Design.

For Mechanical Engineering Seniors.

Course 19 is open only to those who have taken Courses 4, 5, 6, and 11.

Four exercises per week. W.

20. Specifications and Contracts.

For Mechanical Engineering Seniors.

Three exercises per week. W.

21. Specifications and Contracts.

For Mechanical Engineering Seniors.

Three exercises per week. S.

MILITARY DRILL.

Practical instruction in drill and gymnastic exercises.

Four exercises per week throughout the Freshman, Sophomore, and Junior years.

MILITARY SCIENCE.

Theoretical instruction in drill regulations and the elementary principles of military science.

One exercise per week throughout the Freshman, Sophomore, and Junior years; three themes in the Senior year.

PHILOSOPHY AND EDUCATION.

1. The History of Educational Theory.

Open to Sophomores.

Two exercises per week. W.

2. Ethics.

Open to Sophomores.

Two exercises per week. S.

3. Psychology.

Open to Juniors and Seniors.

Three exercises per week. F.

4. The Philosophy of Education.

Open to Juniors and Seniors.

Three exercises per week. W.

5 or 6. Logic.

On alternate years a course in advanced logic will be given. Course 5 will be offered in 1905.

Open to Juniors and Seniors.

Three exercises per week. S.

PHYSICS.

Courses 1 to 5 are required of students in the Engineering and Technical Chemistry courses and presupposes a preparation in Mathematics through Trigonometry.

Courses 9 to 13 are required of students in the Agricultural Course. Students in the General Course are required to elect either 1 to 5 or 9 to 13.

1. Mechanics.

Freshmen, three exercises per week. S.

The principles and laws of general physics are illustrated by a number of experiments, and the student is taught to make ready application of his mathematics in the solution of problems.

It is intended to provide a foundation in the dynamics of solids, liquids, and gases, and also in the subjects of statics and hydrostatics.

Instruction is given by lectures, recitations, and problem work. The text used is Ganot's Physics. Reference is made to Ame's Theory of Physics, Watson's Physics, and other standard treatises.

2. Heat.

Sophomores, three exercises a week for first eight weeks. F.

The theories of heat are briefly discussed. The subdivisions of the subject, such as the nature of heat, its effects, thermometry, sources of heat, the transference and transformations of heat are considered in detail. Constant attention is given to the relation of these topics to the subject of thermo-dynamics. Ganot's Physics is used as the text.

3. Light.

Sophomores, three exercises a week for the last seven weeks. F.

The subject is approached from the geometrical and physical standpoint. A number of experiments are performed, illustrative of wave motion in general, followed by a study of that form of wave motion upon which the modern theory is based.

The subject is developed progressively, and due attention is given to such subjects as reflection, refraction, color, the spectrum, and interference and polarization phenomena.

The student makes a careful study of optical instruments of all classes. Ganot's Physics is used as the text.

4. Sound.

Sophomores, three exercises per week for the first five weeks. W.

The course consists of lectures and recitations, considerable emphasis being laid upon the relation of the subject to the transmission of speech.

The text used is Stone's Elementary Lessons in Sound.

5. Electricity and Magnetism.

Sophomores, three exercises per week for the last five weeks of the second term, and all of the third term. W. and S.

Numerous experiments are performed to illustrate the various phenomena of electrostatics, magnetism, current electricity, and electric waves. As the course advances, the attention of the student is constantly called to the applications of electricity to the arts and sciences.

6. Elements of Least Squares and the Precision of Measurements.

Juniors, three exercises per week. F.

This course is intended to serve as an introduction to the subject of Physical Measurements. It familiarizes the student with the precautions necessary in taking experimental data, and of properly using his data in order to secure the most reliable results.

A large number of problems are solved, illustrating the determination of physical constants, and in deducing the constants of empirical equations.

7. Physical Laboratory.

Juniors, three exercises per week. W.

The apparatus employed in the experimental part of Courses 7 and 8 is adapted to no special laboratory manual, and either notes are prepared for students' use, or reference is made to the works of Ames and Bliss, E. L. Nichols, H. M. Godwin, and others.

The laws of general physics are investigated experimentally. The student is encouraged to acquire skill in the manipulation of apparatus, habits of clearness and neatness in keeping records, as well as enthusiasm for independent and original investigation.

A careful study is made of the Analytical Balance, time measuring devices, heat measurements, the microscope, spectroscope, lens combinations, photometry, the laws of vibrating strings, and the simple electrical measurements.

8. Physical Laboratory.

Juniors, three exercises per week. S.

This is a continuation of Course 7 and is largely devoted to the calibration of galvanometers, ammeters, the determination of the constants of instruments, the measurement of voltages, resistances, etc.

On the completion of Courses 7 and 8, an examination is given to test the student's knowledge of physical research, both in attacking a given problem, and in thinking and acting for himself.

Physics 9 to 13 are given to students who do not intend to pursue mathematics beyond the subject of Trigonometry. These courses are accepted as the work required in the course in agriculture. Their completion does not prepare the student to enter Courses 7 and 8.

9. Mechanics.

Agricultural Freshmen, three exercises per week. S.

This is a briefer course than Physics 1, and aims to meet the needs of the student wishing to obtain some knowledge of the simpler physical phenomena, as related to the Science of Agriculture.

10. Heat.

Agricultural Sophomores, three exercises per week for six weeks. F.

11. Light.

Agricultural Sophomores, three exercises per week for five weeks. F.

12. Sound.

Agricultural Sophomores, three exercises per week for the last four weeks. F.

13. Electricity and Magnetism.

Agricultural Sophomores, three exercises per week throughout the term. W.

Physics 14 and 15 are intended to acquaint the student with the fundamental principles and facts of physics.

14. Elementary Physics.

First year of the short course in Agriculture, *three exercises per week. S.*

15. Elementary Physics.

Second year of the short course in Agriculture, *three exercises per week. F.*

This is the completion of the work begun under Course 14.

POLITICAL SCIENCE.

1. Political Economy.

An elementary course, with lectures upon some of the practical questions of the day.

For Agricultural and General Sophomores and Engineering and Chemical Seniors.

Five exercises per week. S.

2. Laws of Business.

Recitations supplemented by lectures and the discussion of cases.

Two credit hours.

Courses 2 and 3 are given consecutively in the Fall term.

Five exercises per week.

For Agricultural and General Seniors.

3. American Constitutional Law.

Use is made of Pomeroy's Constitutional Law, which is supplemented by the decisions of the United States Supreme Court.

Special attention is given to the connections between American constitutions and American political history.

Three credit hours.

4. Money and Banking.

Recitations, readings, and lectures.

For Agricultural and General Seniors.

Courses 4 and 6 are given in alternate years. Course 4 will be offered in the year 1904-'05.

Open only to those who have taken Course 1.

Three exercises per week. W.

5. Socialism and Social Reform.

Readings, recitations, and lectures.

For Agricultural and General Seniors.

Courses 5 and 7 are given in alternate years. Course 5 will be offered in 1904-'05.

Open only to those who have taken Course 1.

Three exercises per week. S.

7. Public Finance.

For Agricultural and General Seniors.

Courses 5 and 7 are given in alternate years.

Open only to those who have taken Course 1.

Three exercises per week. W.

6. International Law.

For Agricultural and General Seniors.

Courses 4 and 6 are given in alternate years.

Three exercises per week. S.

SHOP WORK.

Three hours' work in the shop is reckoned as one exercise.

1. Wood Work.

Exercises in carpentry work, joinery, and pattern making.
For all male Freshmen.

Two exercises per week. F.

2. Wood Work.

A continuation of 1. For all male Freshmen.

Two and one-half exercises per week. W.

NOTE.—Alternate with Drawing on Wednesdays.

3. Wood Work.

For Chemical and Engineering Freshmen.

Two exercises per week. S.

4. Iron Work.

For Chemical Seniors and Engineering Sophomores.

Two exercises per week. F.

5. Iron Work.

For Chemical and Engineering Sophomores.

Two exercises per week. W.

6. Iron Work.

For Engineering Juniors.

Two exercises per week. F.

7. Iron Work.

For Engineering Juniors.

Two exercises per week. W.

8. Iron Work.

For Engineering Juniors.

Two exercises per week. S.

9. Iron Work.

For Mechanical Engineering Seniors.

Two exercises per week. F.

10. Iron Work.

For Mechanical Engineering Seniors.

Two exercises per week. W.

11. Iron Work.

For Mechanical Engineering Seniors.

Two exercises per week. S.

12. Wood Work.

For first year two-year students.

Three exercises per week. W.

13. Iron Work.

For first year two-year students.

Three exercises per week. S.

14. Special Shop Work.

Work arranged to suit the needs of particular students.

From one to four exercises per week. F.

15. Special Shop Work.

From one to four exercises per week. W.

16. Special Shop Work.

From one to four exercises per week. S.

SPANISH.

Spanish 1, 2, and 3.

Essentials of Spanish Grammar. Translation of modern Spanish prose. Stories and plays by modern authors will be read.

Three exercises per week. F., W., S.

Elective for General Course Students in Sophomore, Junior, or Senior year.

ZOOLOGY.

1. Introductory Zoölogy.

A general introduction to the study of animal life, by means of lectures and laboratory dissections of the principal types. For Agricultural and General Sophomores and second year short course students.

Three exercises per week. F.

2. Animal Biology.

A general study of the nature and processes of animal life, with special attention to heredity, variation, development, and mental powers.

Open to students who have taken Course 1.

Three exercises per week. W.

3. Entomology.

A review of the classification, structural characters, and biological relations of insects, with a special study of those injurious to cultivated crops and domestic animals, and of the means of preventing their injuries.

Open only to those who have taken Courses 1 and 2.

Three exercises per week. S.

ZOOLOGY.

The courses in Zoölogy are arranged in sequence for those studying Agriculture or Economic Entomology, and for those desiring a more general course fitting them for teaching or for medical studies, though any courses offered may be taken by those who have completed previous courses necessary.

1. Elementary Biology.

A general study of the lower forms of life by means of lectures and laboratory studies of the simplest plants and animals, forming an introduction to the study of both animal and plant life. For Agricultural and General Sophomores.

Three exercises per week. F.

2. Invertebrate Zoölogy.

The structure and life of the higher invertebrate animals with special study of insects. Lectures and laboratory dissections of typical forms. For Agricultural and General Sophomores completing Course 1.

Three exercises per week. W.

3. Economic Entomology.

Insects affecting crops, domestic animals, etc., their life, histories, habits, and methods of combating them. Special consideration of general farm methods for control of insects affecting staple crops and of spraying, machinery, and insecticides for combating truck and fruit insects. For Agricultural Sophomores completing Course 2.

Four exercises per week. S.

4. General Entomology.

A general survey of the structure, habits, and classification of the different orders of insects. Lectures and laboratory dissections, field collecting and classification. For General Sophomores completing Course 2.

Four exercises per week. S.

5. Vertebrate Anatomy and Physiology.

The comparison of anatomy and physiology of vertebrate animals, general physiology of higher animals, and laboratory dis-

sections of a few typical forms. For Agricultural and General Juniors completing Courses 1 and 2.

Five exercises per week. F.

6. Principles of Zoölogy.

The history, fundamental principles, problems, and philosophy of Zoölogy. Lectures. For Agricultural and General Juniors having completed four previous courses.

Three exercises per week. W.

7. Economic Ornithology.

A study of the relation of birds to Agriculture, to each other and other organisms. For Agricultural and General Juniors.

One exercise per week. W.

8. Histology.

A study of the minute anatomy or cell structure of domestic animals and man; methods of preparing, staining, and mounting specimens and sections of tissues; the use of the microscope and accessories. For Agricultural and General Juniors completing Course 5.

Three exercises per week. S.

9. Advanced Economic Entomology.

The methods of study and general principles of combating insect pests; the literature and history of economic entomology; practice in determining and rearing and combating insect pests. For Agricultural Juniors having completed Course 3.

Three exercises per week. S.

10. Advanced Entomology.

Advanced work in General Entomology; collecting, classification and anatomical studies. For General or Agricultural Juniors having completed Course 2.

Three exercises per week. S.

11, 12, and 13. Advanced Zoölogy.

Averaging four exercises per week for the year. For students who elect Zoölogy for Senior Year to be arranged to suit individual needs. Open to those who have completed five previous courses and have shown proficiency in Zoölogy.

COURSES OF STUDY AND SCHEDULE OF HOURS.

For details see Description of Studies.

Chapel exercises: 11.50 daily. Attendance is required of all students.

Military drill: Fall term M., T., Th., F., 7 to 7.50 a. m.
Winter and Spring terms, M., T., Th., F., 12 to 12.30.
Attendance is required of all male students.

FRESHMAN YEAR.

FOR ALL FOUR-YEAR COURSES.

FALL TERM.

	Exercises.
Rhetoric—English 1	2
Algebra—Mathematics 1	5
Wood Work—Shop Work 1	2
Drawing—Drawing 1	2
†History—History 1 or 4	3
French—French 1	3
or German—German 1 }	
Inorganic Chemistry—Chemistry 1	3
*Solid Geometry—Mathematics 2	3
Military Science	1

WINTER TERM.

Rhetoric—English 2	2
Trigonometry—Mathematics 3	4
Wood Work—Shop Work 2	2½
Drawing—Drawing 2	2½
†History—History 2 or 5	3
French—French 2	3
or German—German 2 }	
Inorganic Chemistry—Chemistry 2	3
Military Science	1

*Optional. Attention is called to preparation required for Drawing 5, 8 and 7. (See page 61.)

SPRING TERM.

Rhetoric—English 3	.	.	.	.	.	.	.	1
†Surveying—Mathematics 4	.	.	.	.	.	.	.	3
Mechanics—Physics 1	.	.	.	.	.	.	.	3
‡Mechanics—Physics 9	.	.	.	.	.	.	.	3
†Botany—Botany 3	.	.	.	.	.	.	.	3
†Wood Work—Shop Work 3	.	.	.	.	.	.	.	2
†Horticulture—Horticulture 1	.	.	.	.	.	.	.	2
†Drawing—Drawing 3	.	.	.	.	.	.	.	3
†History—History 3 or 6	.	.	.	.	.	.	.	3 or 4
French—French 3	}	.	.	.	.	.	.	3
or German—German 3								
†Organic Chemistry—Chemistry 3	.	.	.	.	.	.	.	2
Military Science	.	.	.	.	.	.	.	1

COURSES IN AGRICULTURE.

SOPHOMORE YEAR.

FALL TERM.

									Exercises.
German 4 . . . . .	.	.	.	.	.	.	.	.	3
Chemistry 4 . . . . .	.	.	.	.	.	.	.	.	3
Zoölogy 1 . . . . .	.	.	.	.	.	.	.	.	3
Physics 10, six weeks	}								3
Physics 11, six weeks		.	.	.	.	.	.	.
Physics 12, four weeks									
Horticulture 2 . . . . .	.	.	.	.	.	.	.	.	1
Botany 4 . . . . .	.	.	.	.	.	.	.	.	2
Agriculture 7 . . . . .	.	.	.	.	.	.	.	.	3
Military Science . . . . .	.	.	.	.	.	.	.	.	1

WINTER TERM.

German 5	.	.	.	.	.	.	.	3
Chemistry 4	.	.	.	.	.	.	.	3
Zoölogy 2	.	.	.	.	.	.	.	3
Physics 13	.	.	.	.	.	.	.	3

†In the first and second terms History is taken by women in place of Shop Work. It is also taken by students who are prepared for advanced work. In the third term Shop Work and Drawing are taken by students intending to complete either of the Engineering Courses or the course in Technical Chemistry; Botany is taken by all other students. Horticulture is taken by students intending to complete the Agricultural Course. History is taken by students intending to complete the General Course. Students in the General Course also elect between Surveying and Organic Chemistry.

‡For Agricultural students and such general students as elect it.

Horticulture 3	3
Agriculture 8	3
Military Science	1

SPRING TERM.

German 6	3
Zoölogy 3	4
Horticulture 2	2
Political Science 1	5
Agriculture 9	3
Military Science	1

JUNIOR YEAR.

FALL TERM.

Chemistry 6	3
Geology 2	4
Dairying 1	5
*Zoölogy 5	5
Horticulture 4	3
Agriculture 2	3
Military Science	1

WINTER TERM.

Chemistry 7	2
English 4	2
*Zoölogy 6	1
*Zoölogy 7	3
Forestry 1	3
Agriculture 3	3
Agriculture 10	3
Agriculture 11	4
Military Science	1

SPRING TERM.

English 5	2
Geology 1	3
Horticulture 5	3
Agriculture 4	3
Agriculture 12	3
Agriculture 13	4
*Zoölogy 8, 9, or 10	3
Military Science	1

*Zoölogy Courses in Biological Division marked * above.

NOTE.—English 7. A course in debating, one hour per week, is required in the Junior year, either in the winter or spring term.

During the Junior year students who desire and are qualified to take up work in the Biological or Chemical Division of the Agricultural Course may substitute work in those divisions for Dairying, Agriculture 11, and Agriculture 12.

SENIOR YEAR.

FALL TERM.

	(Required.)	Exercises per week.
Political Science 2 and 3		5
History 7		4
Agriculture 15		2
Thesis		1

(Six hours elective from any courses offered.)

WINTER TERM.

(Required.)

	Exercises per week.
Political Science 6	3
History 8	3
Horticulture 6	3
Thesis	2

(Six hours elective from any courses offered.)

SPRING TERM.

(Required.)

Meteorology 1	3
Agriculture 16	3
Agriculture 17	3
Thesis	2

(Six hours elective from any courses offered.)

COURSES IN ENGINEERING.

SOPHOMORE YEAR.

FALL TERM.

	Exercises per week.
Analytic Geometry—Mathematics 5	5
Orthographic Projection—Drawing 4	2
Heat—Physics 2, eight weeks)	
Light—Physics 3, seven weeks {	3
German—German 4	3
Forge Shop—Shop Work 4	2
Mechanism—Mechanical Engineering 1	2
Chemical Laboratory—Chemistry 5	2
Military Science	1

WINTER TERM.

Differential Calculus—Mathematics 6	5
Descriptive Geometry—Drawing 5	2
Sound—Physics 4, five weeks)	
Electricity and Magnetism—Physics 5, five weeks {	3
German—German 5	3
Machine Shop—Shop Work 5	2
Mechanism—Mechanical Engineering 2	2
Chemical Laboratory—Chemistry 5	2
Military Science	1

SPRING TERM.

Integral Calculus—Mathematics 7	5
Electricity and Magnetism—Physics 5	3
German—German 6	3
Descriptive Geometry—Drawing 6	5
Mechanism—Mechanical Engineering 3	2
Military Science	1

COURSE IN ELECTRICAL ENGINEERING.

JUNIOR YEAR.

FALL TERM.

Mechanics of Engineering—Mechanical Engineering 4	2
Theoretical Electricity—Electrical Engineering 4	3
Least Squares and Precision of Measurements—Physics 6	3

Exercises per week.

Steam Engineering—Mechanical Engineering 8	4
Direct Currents and Direct Current Dynamos, Electrical Engineering 1	3
Descriptive Geometry—Drawing 7	2
Graphic Statics—Mechanical Engineering 7	2
Military Science	1

WINTER TERM.

Mechanics of Engineering—Mechanical Engineering 5 . .	4
Physical Laboratory—Physics 7	3
Steam Engineering—Mechanical Engineering 9	3
Direct Current Dynamos and Motors—Electrical Engineering 2	3
Theoretical Electricity—Electrical Engineering 5 . .	3
Technical Drawing—Drawing 8	2
Debating—English 7	1
Military Science	1

SPRING TERM.

Mechanics of Engineering—Mechanical Engineering 6 . .	4
Physical Laboratory—Physics 8	3
Steam Engineering—Mechanical Engineering 10	4
Direct Current Dynamos and Motors—Electrical Engineering 3	}
Theoretical Electricity—Electrical Engineering 6	
Technical Drawing—Drawing 9	2
Military Science	1

SENIOR YEAR.

FALL TERM.

Materials of Construction—Mechanical Engineering 11 . .	4
Theoretical Electricity—Electrical Engineering 7 . . .	5
Mechanical Laboratory—Mechanical Engineering 14 . .	2
The Telephone, Electrical Engineering 10, six weeks	}
The Telegraph, Electrical Engineering 11, six weeks	
Storage Batteries, Electrical Engineering 12, three weeks	
or French—French 4	3
Hydraulics—Mechanical Engineering 12	3
Electrical Laboratory—Electrical Engineering 15 . . .	2

WINTER TERM.

	Exercises per week.
Electrical Laboratory—Electrical Engineering 16 . . .	2
Electric Lighting—Electrical Engineering 13 . . .	3
Power Distribution for Electric Railroads—Electrical Engineering 14	3
Mechanical Laboratory—Mechanical Engineering 15 . . .	3
Theoretical Electricity—Electrical Engineering 8 . . .	5
Multiple Expansion Engines—Mechanical Engineering 17 .	3
or French—French 5	3

SPRING TERM.

Mechanical Laboratory—Mechanical Engineering 16 . . .	2
Gas and Hot Air Engines—Mechanical Engineering 18 . . .	3
Alternating Current Phenomena—Electrical Engineering 9 .	3
or French—French 6	3
Electrical Laboratory—Electrical Engineering 17 . . .	2
Political Economy—Political Science 1	5
Thesis—Electrical Engineering 18	3

COURSE IN MECHANICAL ENGINEERING.

JUNIOR YEAR.

FALL TERM.

	Exercises per week.
Mechanics of Engineering—Mechanical Engineering 4 . . .	2
Least Squares and Precision of Measurements—Physics 6 . .	3
Steam Engineering—Mechanical Engineering 8	4
Direct Currents and Direct Current Dynamos—Electrical Engineering 1	3
Iron Work—Shop Work 6	2
Descriptive Geometry—Drawing 7	2
Graphic Statics—Mechanical Engineering 7	2
Military Science	1

WINTER TERM.

Mechanics of Engineering—Mechanical Engineering 5 . . .	4
Physical Laboratory—Physics 7	3
Steam Engineering—Mechanical Engineering 9	3
Direct Current Dynamos and Motors—Electrical Engineering 2	3
Iron Work—Shop Work 7	2

Exercises per week.

Technical Drawing—Drawing 8	2
Debating—English 7	1
Military Science	1

SPRING TERM.

Mechanics of Engineering—Mechanical Engineering 6	4
Physical Laboratory—Physics 8	3
Steam Engineering—Mechanical Engineering 10	4
Direct Current Dynamos and Motors—Electrical Engineering 3, five weeks	3
Alternating Currents—Electrical Engineering 19, five weeks	
Iron Work—Shop Work 8	2
Technical Drawing—Drawing 9	2
Military Science	1

SENIOR YEAR.

FALL TERM.

Materials of Construction—Mechanical Engineering 11	4
Hydraulics—Mechanical Engineering 12	3
Technical Drawing—Drawing 10	3
Mechanical Laboratory—Mechanical Engineering 14	2
Iron Work—Shop Work 9	2
Alternating Currents, Electrical Engineering 20, eight weeks	3
Applications of Electricity, Electrical Engineering 21, seven weeks	
English 6	2

WINTER TERM.

Machine Design—Mechanical Engineering 19	4
Mechanical Laboratory—Mechanical Engineering 15	3
Multiple Expansion Engines—Mechanical Engineering 17	3
Iron Work—Shop Work 10	1
Hydraulic Motors—Mechanical Engineering 13	3
Specifications and Contracts—Mechanical Engineering 20	3
Thesis	2

SPRING TERM.

Gas and Hot Air Engines—Mechanical Engineering 18	3
Mechanical Laboratory—Mechanical Engineering 16	2
Political Economy—Political Science 1	5
Iron Work—Shop Work 11	2
Specifications and Contracts—Mechanical Engineering 21	3
Thesis	3

COURSE IN TECHNICAL CHEMISTRY.

SOPHOMORE YEAR.

FALL TERM.

	Exercises per week.
Analytic Geometry—Mathematics 5	5
Orthographic Projection—Drawing 4	2
German—German 4	3
Chemical Laboratory—Chemistry 4	5
Heat—Physics 2, eight weeks }	3
Light—Physics 3, seven weeks }	
Military Science	1

WINTER TERM.

Differential Calculus—Mathematics 6	5
German—German 5	3
Chemical Laboratory—Chemistry 10	7
Sound—Physics 4, five weeks }	3
Electricity and Magnetism—Physics 5, five weeks }	
Military Science	1

SPRING TERM.

Integral Calculus—Mathematics 7	5
Mineralogy—Geology 1	3
German—German 6	3
Organic Chemistry—Chemistry 8	2
Chemical Laboratory—Chemistry 11	3
Electricity and Magnetism—Physics 5	3
Military Science	1

JUNIOR YEAR.

FALL TERM.

Chemistry of Plant Growth—Chemistry 6	3
Organic Chemistry—Chemistry 9	3
French—French 4	3
Mechanics of Engineering—Mechanical Engineering 4	2
Graphic Statics—Mechanical Engineering 7	2
Chemical Laboratory—Chemistry 11	4
Military Science	1

WINTER TERM.

Chemical Laboratory—Chemistry 11	4
Industrial Chemistry—Chemistry 13	2
Mechanics of Engineering—Mechanical Engineering 5	4

	Exercises per week.
French—French 5	3
Physical Laboratory—Physics 7	3
Debating—English 7	1
Military Science	1

SPRING TERM.

Chemical Laboratory—Chemistry 11	4
Metallurgy—Chemistry 14	2
Mechanics of Engineering—Mechanical Engineering 6	5
French—French 6	3
Physical Laboratory—Physics 8	3
Military Science	1

SENIOR YEAR.

FALL TERM.

Chemical Laboratory—Chemistry 11 or Chemistry 21	8
Iron Work—Shop Work 4	2
Chemical Journals—Chemistry 12	1
Steam Engineering—Mechanical Engineering 8	4
Industrial Electricity—Electrical Engineering 22	3

WINTER TERM.

Chemical Laboratory and Thesis—Chemistry 20 or 21	8
Chemical Journals—Chemistry 12	1
Physical Chemistry—Chemistry 15	3
Industrial Electricity—Electrical Engineering 23	3
Chaucer to Wordsworth—English 4	2

SPRING TERM.

Chemical Laboratory and Thesis—Chemistry 20 or 21	6
Chemical Journals—Chemistry 12	1
Assaying—Chemistry 19	1
Physical Chemistry—Chemistry 16	2
Political Economy—Political Science 1	5
Wordsworth to Browning—English 5	2

GENERAL COURSE.

SOPHOMORE YEAR.

FALL TERM.

	Exercises per week.
Elementary Biology—Zoölogy 1	3
German—German 4	3

	Exercises per week.
*Chemical Laboratory—Chemistry 4	3
Heat and Light—Physics 2 and 3, or Physics 10, 11, and 12	3
*History—History 1 or 4	4
*Analytic Geometry—Mathematics 5	5
*Spanish—Spanish 1	3
Military Science	1
*Elect 7 exercises.	

WINTER TERM.

German—German 5	3
*Chemical Laboratory—Chemistry 4	3
Sound and Electricity—Physics 4 and 5 or Physics 13	3
*History—History 2 or 5	3
*Invertebrate Zoölogy—Zoölogy 2	3
*Differential Calculus—Mathematics 6	5
*Industrial Drawing—Drawing 11	2
*Spanish—Spanish 2	3
*Philosophy 1	2
Military Science	1
*Elect 10 exercises.	

SPRING TERM.

Political Economy—Political Science 1	5
German—German 6	3
*Electricity and Magnetism—Physics 5	3
*History—History 3 or 6	3
*Entomology—Zoölogy 4	4
*Chemical Laboratory—Chemistry 10	3
*Industrial Drawing—Drawing 12	3
*Integral Calculus—Mathematics 7	5
*Philosophy 2	2
*Spanish—Spanish 3	3
Military Science	1
*Elect 8 exercises.	

JUNIOR YEAR.

Sixteen exercises required; all elective, with the exception of Military Science and English 7.

FALL TERM.

Psychology—Philosophy 3	3
French—French 4	3
American Political History—History 7	4
Elementary Geology—Geology 2	4

Exercises per week.

Chemistry of Plant Growth—Chemistry 6	3
Chemical Laboratory—Chemistry 4 or Chemistry 10	3
Least Squares and Precision of Measurements—Physics 6	3
Industrial Drawing—Drawing 13	3
Differential Equations—Mathematics 8	2
Spanish—Spanish 1	3
Vertebrate Anatomy and Physiology—Zoölogy 5	5
Military Science	1

WINTER TERM.

French—French 5	3
American Political History—History 8	3
English 4	2
Philosophy of Education—Philosophy 4	3
Money and Banking, or International Law—Political Science 4 or 6	3
Chemistry of Food and Nutrition—Chemistry 7	2
Chemical Laboratory—Chemistry 4 or Chemistry 10	3
Physical Laboratory—Physics 7	3
Industrial Drawing—Drawing 14	2
Quaternions—Mathematics 9	2
Principles of Zoölogy—Zoölogy 6	3
Spanish—Spanish 2	3
Economic Ornithology—Zoölogy 7	1
Debating—English 7	1
Military Science	1

SPRING TERM.

French—French 6	3
Mineralogy—Geology 1	3
Logic, or Science of Thought—Philosophy 5 or 6	3
American Political History—History 9	2
Socialism or Finance—Political Science 5 or 7	3
English—English 5	2
Industrial Drawing—Drawing 15	3
Chemical Laboratory—Chemistry 10 or 11	3
Physical Laboratory—Physics 8	3
Spanish—Spanish 3	3
Debating—English 7	1
Histology—Zoölogy 8	3
Advanced Economic Entomology—Zoölogy 9	3
Advanced Entomology—Zoölogy 10	3
Military Science	1

SENIOR YEAR.

Sixteen exercises required; all elective.

FALL TERM.

Exercises per week.

Laws of Business—Political Science 2	}	. . . . .	5
Constitutional Law—Political Science 3			
Psychology—Philosophy 3			3
French—French 7			3
Literary Criticism—English 6			2
German—German 7			3
Chemical Laboratory—Chemistry 10 or 11			3
Advanced Zoölogy—Zoölogy 11			4
Advanced Botany—Botany 5			3
Drawing and History of Painting—Drawing 16			3
Spanish—Spanish 1			3
Thesis Work			2

WINTER TERM.

Money and Banking, or International Law—Political Science 4 or 6	3
Philosophy 4	3
French—French 8	3
German—German 8	3
American Literature—English 8	3
Astronomy—Mathematics 10	4
Chemical Laboratory—Chemistry 11	3
Advanced Zoölogy—Zoölogy 12	3
Advanced Botany—Botany 6	3
Drawing and History of Painting—Drawing 17	3
Spanish—Spanish 2	3
Thesis Work	1 or 2

SPRING TERM.

American Literature—English 9	3
French—French 9	3
German—German 9	3
Meteorology—Meteorology 1	3
Roads—Mathematics 11	3
Socialism or Finance—Political Science 5 or 7	3
Logic or Science of Thought—Philosophy 5 or 6	3
Chemical Laboratory—Chemistry 11	3
Advanced Zoölogy—Zoölogy 13	3
Advanced Botany—Botany 7	3
Drawing and History of Painting—Drawing 18	3
Spanish—Spanish 3	3
Thesis Work	1 or 2

HOURS OF STUDY.

FRESHMAN CLASS FOR

Term	Day	Section	8-9	9-10	10-11
Fall	Mon.	I II	..... .....	..... .....	{ Chemistry 1
	Tues.	I II	{ German 1..... {	{ French 1..... {	Mathematics 1 Military Sci.
	Wed.	I II	English 1.....	English 1.....	{ Chemistry 1 {
	Thu.	I II	{ German 1..... {	{ French 1..... {	Mathematics 1
	Fri.	I II	English 1.....	History 1 or 4..... English 1.....	{
	Sat.	I II	{ German 1..... {	{ French 1..... {	Mathematics 1
Winter	Mon.	I II	..... .....	..... .....	{ Chemistry 2 {
	Tues.	I II	{ German 2..... {	{ French 2..... {	Mathematics 3
	Wed.	I II	English 2.....	History 2 or 5..... English 2.....	{
	Thu.	I II	{ German 2..... {	{ French 2..... {	Mathematics Military Sci.
	Fri.	I II	English 2.....	English 2.....	{ Chemistry 2 {
	Sat.	I II	{ German 2..... {	{ French 2	Mathematics 3
Spring	Mon.	I II	..... .....	Physics 9.....	Physics 1 Horticulture 1
	Tues.	I II	{ German 3..... {	French 3..... Drawing 3.....	Botany 3 Drawing 3
	Wed.	I II	Military Sci..... English 3.....	Physics 9.....	Physics 1 Horticulture 1
	Thu.	I II	{ German 3..... {	French 3..... Drawing 3.....	Botany 3 Drawing 3
	Fri.	I II	..... Military Sci.....	English 3..... Physics 9.....	Physics 1
	Sat.	I II	{ German 3..... {	French 3..... Drawing 3	Botany 3 Drawing 3

ALL FOUR YEARS' COURSES.

Day	Sec- tion	11-11.50	1.30-2.30	2.30-4
Mon.	I II	Mathematics 1.	Drawing 1..... Shop-work 1.....	Drawing 1 Shop-work
Tues.	I II	Military Science Mathematics 1	Drawing 1..... Shop-work 1.....	Drawing 1 Shop-work 1
Wed.	I II	..... History 1 or 4.....	Mathematics 1..... .....	..... Mathematics 1
Thurs.	I II	..... Mathematics 1.....	Shop-work 1 or.. Drawing 1.....	History 1 or 4 Drawing 1
Fri.	I II	..... Mathematics 1.....	Shop-work 1..... Drawing 1.....	Shop-work 1 Drawing 1
Sat.	I II	Mathematics 1..... .....	..... .....	..... .....
Mon.	I II	Mathematics 3.....	Drawing 2..... Shop-work 2.	Drawing 2 Shop-work 2
Tues.	I II	..... Mathematics 3.....	Drawing 2..... Shop-work 2.....	Drawing 2 Shop-work 2
Wed.	I II	..... Mathematics 3.....	Drawing 2 or.. Shop-work 2 or..	Shop-work 2 Drawing 2
Thurs.	I II	Military Science 2.. Mathematics 3.....	Shop-work 2 or.. Drawing 2.....	History 2 or 5 Drawing 2
Fri.	I II	..... History 2 or 5.....	Shop-work 2..... Drawing 2.....	Shop-work 2 Drawing 2
Sat.	I II	Mathematics 3..... .....	..... .....	..... .....
Mon.	I II	History 3 or 6.....	Mathematics 4.....	Mathematics 4
Tues.	I II	Botany 3..... Drawing 3.....	Mathematics 4.....	Mathematics 4
Wed.	I II	Chemistry 3.....	Mathematics 4.....	Mathematics 4
Thurs.	I II	Botany 3..... Drawing 3.....	Shop-work 3..... History 3 or 6.....	Shop-work 3 History 3 or 6
Fri.	I II	Chemistry 3.....	Shop-work 3..... History 3 or 6.....	Shop-work 3 History 3 or 6
Sat.	I II	Botany 3..... Drawing 3.....	..... .....	..... .....

AGRICULTURE.—SOPHOMORE CLASS.

TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
Fall....	Monday	Zoölogy 1	Zoölogy 1	Physics 10, 11, & 12	.....	Chemistry 4	Chemistry 4
	Tuesday	Agriculture 7	Botany 4	Botany 4	German 4	Chemistry 4	Chemistry 4
	Wednesday	Agriculture 7	Physics 10, 11, & 12	Military Science	.....	Chemistry 4	Chemistry 4
	Thursday	Zoölogy 1	Zoölogy 1	.....	German 4	Agriculture 7	Agriculture 7
	Friday	Botany 4	Botany 4	Horticulture 2	Horticulture 2	Zoölogy 1	Zoölogy 1
	Saturday	.....	Physics 10, 11, & 12	.....	German 4	.....	.....
Winter.	Monday	Zoölogy 2	Zoölogy 2	Physics 13	.....	Chemistry 4	Chemistry 4
	Tuesday	Agriculture 8	.....	Military Science	German 5	Chemistry 4	Chemistry 4
	Wednesday	Agriculture 8	Horticulture 3	Physics 13	.....	Chemistry 4	Chemistry 4
	Thursday	Zoölogy 2	Zoölogy 2	Horticulture 3	German 5	Agriculture 8	Agriculture 8
	Friday	.....	Horticulture 3	Horticulture 3	Horticulture 3	Zoölogy 2	Zoölogy 2
	Saturday	.....	Physics 13	.....	German 5	.....	.....
Spring..	Monday	Military Science	Horticulture 2	Horticulture 2	.....	Zoölogy 3	Zoölogy 3
	Tuesday	Agriculture 9	Political Science 1	.....	German 6	Horticulture 2	Horticulture 2
	Wednesday	Agriculture 9	Political Science 1	.....	.....	Zoölogy 3	Zoölogy 3
	Thursday	.....	Political Science 1	Zoölogy 3	German 6	Agriculture 9	Agriculture 9
	Friday	.....	Political Science 1	.....	.....	Zoölogy 3	Zoölogy 3
	Saturday	.....	Political Science 1	.....	German 6	.....	.....

AGRICULTURE.—JUNIOR CLASS.

TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
Fall....	Monday	Dairying 1	Dairying 1	Geology 2	Horticulture 4	Agriculture 2	Agriculture 2
	Tuesday	Dairying 1	Dairying 1	Dairying 1	Agriculture 2	Horticulture 4	Horticulture 4
	Wednesday	Chemistry 6	Dairying 1	Geology 2	Agriculture 2	Horticulture 4	Horticulture 4
	Thursday	Dairying 1	Dairying 1	Dairying 1	Dairying 1	.....	Chemistry 5
	Friday	.....	.....	Geology 2	Dairying 1	.....	Chemistry 6
Winter.	Saturday	Military Science	Geology 2	Geology 2	Geology 2	.....	.....
	Monday	English 7	.....	.....	Agriculture 11	Agriculture 3	Agriculture 3
	Tuesday	English 4	Agriculture 10	.....	Forestry 1	Agriculture 11	Chemistry 7
	Wednesday	.....	.....	Agriculture 3	Agriculture 11	Forestry 1	Forestry 1
	Thursday	English 4	Agriculture 10	.....	Forestry 1	.....	Chemistry 7
Spring..	Friday	.....	.....	Agriculture 3	Agriculture 11	Agriculture 10	Agriculture 10
	Saturday	Military Science	.....	.....	Geology 1	.....	.....
	Monday	.....	Geology 1	Geology 1	Agriculture 4	Agriculture 13	.....
	Tuesday	Horticulture 5	Horticulture 5	English 5	Agriculture 4	Agriculture 13	.....
	Wednesday	.....	Geology 1	Geology 1	English 7	Agriculture 13	.....
	Thursday	Agriculture 12	Horticulture 5	English 5	.....	Agriculture 4	Agriculture 4
	Friday	Agriculture 12	Geology 1	Geology 1	.....	Agriculture 13	Agriculture 13
	Saturday	Agriculture 12	Horticulture 5	Horticulture 5	Horticulture 5	.....	.....

AGRICULTURE.—SENIOR CLASS.

TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
Fall . . .	Monday	.....	.....	.....	.....	*Agriculture 14	Agriculture 15
	Tuesday	.....	Political Science 2 & 3	History 7	.....	*Agriculture 14	Agriculture 15
	Wednesday	.....	Political Science 2 & 3	*Forestry 2	.....	*Agriculture 14	Agriculture 14
	Thursday	.....	Political Science 2 & 3	History 7	.....	*Forestry 2	*Forestry 2
	Friday	*Forestry 2	.....	*Agriculture 14	Political Science 2 & 3	History 7	.....
Winter.	Saturday	.....	Political Science 2 & 3	History 7	.....	.....	.....
	Monday	.....	.....	History 8	.....	.....	.....
	Tuesday	.....	Horticulture 6	Political Science 6	.....	.....	*Agriculture 6
	Wednesday	.....	*Agriculture 5	History 8	.....	.....	*Agriculture 6
	Thursday	.....	Horticulture 6	Political Science 6	.....	.....	.....
Spring..	Friday	.....	*Agriculture 5	History 8	.....	Horticulture 6	Horticulture 6
	Saturday	.....	*Agriculture 5	Political Science 6	.....	.....	.....
	Monday	.....	.....	.....	.....	*Horticulture 7	*Horticulture 7
	Tuesday	*Forestry 3	Agriculture 17	Meteorology 1	.....	Agriculture 16	Agriculture 16
	Wednesday	*Horticulture 8	.....	.....	Agriculture 16	*Horticulture 7	*Horticulture 7
	Thursday	*Forestry 3	Agriculture 17	Meteorology 1	.....	.....	.....
	Friday	*Horticulture 8	.....	*Horticulture 7	Agriculture 16	*Forestry 3	*Forestry 3
	Saturday	Agriculture 17	Meteorology 1

*Elective.

ENGINEERING.—SOPHOMORE CLASS.

AND THE MECHANIC ARTS.

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TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
Fall	Monday	Drawing 4	Drawing 4	Drawing 4	Chemistry 5	Chemistry 5
	Tuesday	Mathematics 5	Military Science	Physics 2 and 3	German 4	I Shop-work 4	I Shop-work 4
	Wednesday	Mathematics 5	Drawing 4	Drawing 4	Drawing 4	Chemistry 5	Chemistry 5
	Thursday	Mathematics 5	Mechanical Eng. 1	Physics 2 and 3	German 4	II Shop-work 4	Shop-work 4
	Friday	Mathematics 5	I Shop-work 4	I Shop-work 4	I Shop-work 4	II Shop-work 4	Shop-work 4
	Saturday	Mathematics 5	Mechanical Eng. 1	Physics 2 and 3	German 4	.....	.....
Winter.	Monday	.....	Drawing 5	Drawing 5	Drawing 5	Chemistry 5	Chemistry 5
	Tuesday	Mathematics 6	Mechanical Eng. 2	Physics 4 and 5	German 5	I Shop-work 5	I Shop-work 5
	Wednesday	Mathematics 6	Drawing 5	Drawing 5	Drawing 5	Chemistry 5	Chemistry
	Thursday	Mathematics 6	Mechanical Eng. 2	Physics 4 and 5	German 5	II Shop-work 5	II Shop-work 5
	Friday	Mathematics 6	I Shop-work 5	I Shop-work 5	I Shop-work 5	II Shop-work 5	II Shop-work 5
	Saturday	Mathematics 6	Military Science	Physics 4 and 5	German 5	.....	.....
Spring..	Monday	.....	.....	.....	Mechanical Eng. 3	Drawing 6	Drawing 6
	Tuesday	Mathematics 7	.....	Physics 5	German 6	Drawing 6	Drawing 6
	Wednesday	Mathematics 7	Mechanical Eng. 3	.....	.....	Drawing 6	Drawing 6
	Thursday	Mathematics 7	Military Science	Physics 5	German 6	Drawing 6	Drawing 6
	Friday	Mathematics 7	.....	.....	.....	Drawing 6	Drawing 6
	Saturday	Mathematics 7	.....	Physics 5	German 6	.....	.....

ENGINEERING.—JUNIOR CLASS.

TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
Fall	Monday	.....	Electr. Engin. 1	Mech. Engin. 7	Electr. Engin. 4	Physics 6	Physics 6
	Tuesday	Drawing 7	Drawing 7	Drawing 7	Mech. Engin. 8	Physics 6	Physics 6
	Wednesday	Electr. Engin. 1	Mech. Engin. 7	.....	Electr. Engin. 4	Physics 6	Physics 6
	Thursday	Drawing 7	Drawing 7	Drawing 7	Mech. Engin. 8	Shop-work 6	Shop-work 6
	Friday	Electr. Engin. 1	Mech. Engin. 4	Mech. Engin. 8	Electr. Engin. 4	Shop-work 6	Shop-work 6
	Saturday	Military Science	Mech. Engin. 4	.....	Mech. Engin. 8	.....	.....
Winter.....	Monday	English 7	Electr. Engin. 2	Mech. Engin. 5	Electr. Engin. 5	Physics 7	Physics 7
	Tuesday	Drawing 8	Drawing 8	Drawing 8	Mech. Engin. 9	Physics 7	Physics 7
	Wednesday	Electr. Engin. 2	Mech. Engin. 5	.....	Electr. Engin. 5	Physics 7	Physics 7
	Thursday	Electr. Engin. 2	Mech. Engin. 5	.....	Mech. Engin. 9	Shop-work 7	Shop-work 7
	Friday	Drawing 8	Drawing 8	Drawing 8	Electr. Engin. 5	Shop-work 7	Shop-work 7
	Saturday	Military Science	Mech. Engin. 5	.....	Mech. Engin. 9	.....	.....
Spring.....	Monday	Drawing 9	Drawing 9	Drawing 9	Electr. Engin. 6	Physics 8	Physics 8
	Tuesday	Mech. Engin. 5	Electr. Engin. 6	Mech. Engin. 10	Electr. Engin. 3	Physics 8	Physics 8
	Wednesday	Drawing 9	Drawing 9	Drawing 9	Electr. Engin. 6	Physics 8	Physics 8
	Thursday	Mech. Engin. 5	Electr. Engin. 6	Mech. Engin. 10	Electr. Engin. 3	Shop-work 8	Shop-work 8
	Friday	Mech. Engin. 5	Electr. Engin. 6	Mech. Engin. 10	Electr. Engin. 6	Shop-work 8	Shop-work 8
	Saturday	Mech. Engin. 5	Electr. Engin. 3	Mech. Engin. 10	Military Science	.....	.....

MECHANICAL ENGINEERING.—SENIOR CLASS.

TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
Fall	Monday	Electrical Eng. 20 and 21	Mechanical Eng. 12	Mechanical Eng. 11	.....	Shop-work 9	Shop-work 9
	Tuesday	Mechanical Eng. 11	.....	English 6	.....	.....	.....
	Wednesday	Electrical Eng. 20 and 21	Mechanical Eng. 12	Mechanical Eng. 11	.....	Drawing 10	Drawing 10
	Thursday	Mechanical Eng. 11	Mechanical Eng. 12	English 6	Electrical Eng. 20 and 21	Mech. Eng. 14	Mech. Eng. 14
	Friday	Drawing 10	Drawing 10	Drawing 10	.....	Mech. Eng. 14	Mech. Eng. 14
	Saturday	Drawing 10	Drawing 10	Drawing 10	.....	.....	.....
Winter.	Monday	.....	.....	Mechanical Eng. 20	Mechanical Eng. 17	Thesis	Thesis
	Tuesday	Mechanical Eng. 19	.....	.....	Mechanical Eng. 13	Thesis	Thesis
	Wednesday	.....	Mechanical Eng. 19	Mechanical Eng. 20	Mechanical Eng. 17	Mech. Eng. 15	Mech. Eng. 15
	Thursday	.....	.....	Mechanical Eng. 19	Mechanical Eng. 13	Mech. Eng. 15	Mech. Eng. 15
	Friday	Shop-work 10	Shop-work 10	Shop-work 10	Mechanical Eng. 17	Mech. Eng. 15	Mech. Eng. 15
	Saturday	.....	Mechanical Eng. 20	Mechanical Eng. 9	Mechanical Eng. 13	.....	.....
Spring..	Monday	.....	Mechanical Eng. 18	Mechanical Eng. 21	Mechanical Eng. 18	Mech. Eng. 16	Mech. Eng. 16
	Tuesday	.....	Political Science 1	Thesis	Thesis	Mech. Eng. 16	Mech. Eng. 16
	Wednesday	.....	Political Science 1	Shop-work 11	Shop-work 11	Shop-work 11	Shop-work 11
	Thursday	.....	Political Science 1	.....	Mechanical Eng. 21	Thesis	Thesis
	Friday	Mechanical Eng. 21	Political Science 1	.....	Mechanical Eng. 18	Thesis	Thesis
	Saturday	...	Political Science 1	.....	.....	.....	.....

ELECTRICAL ENGINEERING.—SENIOR CLASS.

TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
Fall	Monday	Electrical Eng. 10, 11 and 12	Mechanical Eng. 12	Mechanical Eng. 11	French 4	Electr. Eng. 15	Electr. Eng. 15
	Tuesday	Mechanical Eng. 11	Electrical Eng. 7	.....	Electrical Eng. 7	.....	.....
	Wednesday	Electrical Eng. 10, 11 and 12	Mechanical Eng. 12	Mechanical Eng. 11	French 4	Electr. Eng. 15	Electr. Eng. 15
	Thursday	Mechanical Eng. 11	Mechanical Eng. 12	.....	Electrical Eng. 10, 11 and 12	Mech. Eng. 14	Mech. Eng. 14
	Friday	.....	Electrical Eng. 7	.....	French 4	Mech. Eng. 14	Mech. Eng. 14
	Saturday	.....	Electrical Eng. 7	.....	Electrical Eng. 7	.....	.....
Winter.	Monday	.....	.....	Electrical Eng. 8	Mechanical Eng. 17 or French 5	Electr. Eng. 16	Electr. Eng. 16
	Tuesday	Electrical Eng. 8	.....	.....	Electrical Eng. 14	Electr. Eng. 16	Electr. Eng. 16
	Wednesday	.....	Electrical Eng. 13	Electrical Eng. 8	Mechanical Eng. 17 or French 5	Mech. Eng. 15	Mech. Eng. 15
	Thursday	.....	Electrical Eng. 8	.....	Electrical Eng. 14	Mech. Eng. 15	Mech. Eng. 15
	Friday	.....	Electrical Eng. 13	Electrical Eng. 8	Mechanical Eng. 17 or French 5	Mech. Eng. 15	Mech. Eng. 15
	Saturday	Electrical Eng. 13	.....	.....	Electrical Eng. 14	.....	.....
Spring..	Monday	Electrical Eng. 13	Electrical Eng. 9	.....	Mechanical Eng. 18 or French 6	Mech. Eng. 16	Mech. Eng. 16
	Tuesday	Political Science 1	.....	.....	.....	Mech. Eng. 16	Mech. Eng. 16
	Wednesday	Political Science 1	Thesis	Thesis	Mechanical Eng. 18 or French 6	Electr. Eng. 17	Electr. Eng. 17
	Thursday	Political Science 1	Thesis	Thesis	Thesis	Electr. Eng. 17	Electr. Eng. 17
	Friday	Political Science 1	.....	.....	French 6	Thesis	Thesis
	Saturday	Political Science 1	Mechanical Eng. 18	Electrical Eng. 9

TECHNICAL CHEMISTRY.—SOPHOMORE CLASS.

AND THE MECHANICAL ARTS.

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TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
Fall.....	Monday	Drawing 4	Drawing 4	Drawing 4	Chemistry 4	Chemistry 4
	Tuesday	Mathematics 5	.....	Physics 2 & 3	German 4	Chemistry 4	Chemistry 4
	Wednesday	Mathematics 5	Drawing 4	Drawing 4	Drawing 4	Chemistry 4	Chemistry 4
	Thursday	Mathematics 5	Military Science 6	Physics 2 & 3	German 4	Chemistry 4	Chemistry 4
	Friday	Mathematics 5	.....	.....	.....	Chemistry 4	Chemistry 4
	Saturday	Mathematics 5	.....	Physics 2 & 3	German 4	.....	.....
Winter..	Monday	.....	.....	.....	.....	Chemistry 10	Chemistry 10
	Tuesday	Mathematics 6	.....	Physics 4 & 5	German 5	Chemistry 10	Chemistry 10
	Wednesday	Mathematics 6	Chemistry 10	Chemistry 10	Chemistry 10	Chemistry 10	Chemistry 10
	Thursday	Mathematics 6	Military Science 6	Physics 4 & 5	German 5	Chemistry 10	Chemistry 10
	Friday	Mathematics 6	Chemistry 10	Chemistry 10	Chemistry 10	Chemistry 10	Chemistry 10
	Saturday	Mathematics 6	.....	Physics 4 & 5	German 5	.....	.....
Spring..	Monday	.....	Geology 1	Geology 1	.....	Chemistry 11	Chemistry 11
	Tuesday	Mathematics 7	.....	Physics 5	German 6	Chemistry 11	Chemistry 11
	Wednesday	Mathematics 7	Geology 1	Geology 1	.....	Chemistry 11	Chemistry 11
	Thursday	Mathematics 7	Military Science 0	Physics 5	German 6	Chemistry 8	Chemistry 8
	Friday	Mathematics 7	Geology 1	Geology 1	.....	Chemistry 8	Chemistry 8
	Saturday	Mathematics 7	.....	Physics 5	German 6	.....	.....

TECHNICAL CHEMISTRY.—JUNIOR CLASS.

TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
Fall.....	Monday	Military Science	Military Science	Mech. Engin. 7	French 4	Chemistry 9	Chemistry 9
	Tuesday	Chemistry 6	Chemistry 11	Chemistry 11	Chemistry 11	Chemistry 11	Chemistry 11
	Wednesday	Chemistry 6	Mech. Engin. 7	.....	French 4	Chemistry 9	Chemistry 9
	Thursday	Chemistry 11	Chemistry 11	Chemistry 11	Chemistry 11	Chemistry 11	Chemistry 11
	Friday	Chemistry 6	Mech. Engin. 4	.....	French 4	Chemistry 11	Chemistry 11
	Saturday	.....	Mech. Engin. 4	.....	.....	.....	.....
	Monday	English 7	.....	Mech. Engin. 5	French 5	Physics 7	Physics 7
Winter.....	Tuesday	Chemistry 11	Chemistry 11	Chemistry 13	.....	Physics 7	Physics 7
	Wednesday	.....	Mech. Engin. 5	.....	French 5	Physics 7	Physics 7
	Thursday	.....	Mech. Engin. 5	Chemistry 13	.....	Chemistry 11	Chemistry 11
	Friday	Chemistry 11	Chemistry 11	Chemistry 11	French 5	Chemistry 11	Chemistry 11
	Saturday	Military Science	Mech. Engin. 5	.....	.....	.....	.....
	Monday	Chemistry 11	Chemistry 11	Chemistry 11	French 6	Physics 8	Physics 8
	Tuesday	Mech. Engin. 6	.....	English 5	Chemistry 14	Physics 8	Physics 8
Spring.....	Wednesday	Chemistry 11	Chemistry 11	Chemistry 11	French 6	Physics 8	Physics 8
	Thursday	Mech. Engin. 6	.....	English 5	Chemistry 14	Chemistry 11	Chemistry 11
	Friday	Mech. Engin. 6	.....	.....	French 6	Chemistry 11	Chemistry 11
	Saturday	Mech. Engin. 6	.....	.....	Military Sci.	.....	.....
	Monday	Chemistry 11	Chemistry 11	Chemistry 11	French 6	Physics 8	Physics 8
	Tuesday	Mech. Engin. 6	.....	English 5	Chemistry 14	Physics 8	Physics 8
	Wednesday	Chemistry 11	Chemistry 11	Chemistry 11	French 6	Physics 8	Physics 8

TECHNICAL CHEMISTRY.—SENIOR CLASS.

AND THE MECHANIC ARTS.

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TERM	Day	8-9	9-10	10-11	11.00-11.50	1.30-2.30	2.30-4
Fall.....	Monday	Chemistry 11 or 21	Chemistry 11 or 21	Elec. Engin. 22	Chemistry 11 or Chemistry 21	Chemistry 11 or Chemistry 21
	Tuesday	Chemistry 11 or 21	Chemistry 11 or 21	Chemistry 11 or 21	Mech. Engin. 8	Chemistry 11 or Chemistry 21	Chemistry 11 or Chemistry 21
	Wednesday	Shop-work 4	Shop-work 4	Shop-work 4	Shop-work 4	Elec. Engin. 22	Elec. Engin. 22
	Thursday	Chemistry 11 or 21	Chemistry 11 or 21	Chemistry 11 or 21	Mech. Engin. 8	Chemistry 11 or Chemistry 21	Chemistry 11 or Chemistry 21
	Friday	.....	Chemistry 11 or 21	Chemistry 11 or 21	Elec. Engin. 22	Chemistry 11 or Chemistry 21	Chemistry 11 or Chemistry 21
	Saturday	.....	Chemistry 12.	.....	Mech. Engin. 8	.....	.....
Winter..	Monday	Chemistry 20 or 21	Chemistry 20 or 21	Chemistry 20 or 21	Elec. Engin. 23	Chemistry 20 or Chemistry 21	Chemistry 20 or Chemistry 21
	Tuesday.	English 4	.....	.....	Chemistry 15	Chemistry 20 or Chemistry 21	Chemistry 20 or Chemistry 21
	Wednesday	Chemistry 20 or 21	Chemistry 20 or 21	Chemistry 20 or 21	Elec. Engin. 23	Chemistry 20 or Chemistry 21	Chemistry 20 or Chemistry 21
	Thursday	English 4	.....	.....	Chemistry 15	Chemistry 20 or Chemistry 21	Chemistry 20 or Chemistry 21
	Friday	Chemistry 20 or 21	Chemistry 20 or 21	Chemistry 20 or 21	Elec. Engin. 23	Chemistry 20 or Chemistry 21	Chemistry 20 or Chemistry 21
	Saturday	.....	.....	Chemistry 12	Chemistry 12	.....	.....
Spring...	Monday	Chemistry 20 or 21	Chemistry 20 or 21	Chemistry 20 or 21	Chemistry 20 or 21	Chemistry 20 or Chemistry 21	Chemistry 20 or Chemistry 21
	Tuesday	.....	Political Science 1	English 5	Chemistry 16	Chemistry 20 or Chemistry 21	Chemistry 20 or Chemistry 21
	Wednesday	.....	Political Science 1	.....	.....	Chemistry 20 or Chemistry 21	Chemistry 20 or Chemistry 21
	Thursday	.....	Political Science 1	English 5	Chemistry 16	Chemistry 20 or Chemistry 21	Chemistry 20 or Chemistry 21
	Friday	.....	Political Science 1	Chemistry 19	Chemistry 19	Chemistry 19	Chemistry 19
	Saturday	.....	Political Science 1	.....	Chemistry 12	.....	.....

GENERAL COURSE—SOPHOMORE CLASS.

TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
First....	Monday	Zoölogy 1	Zoölogy 1	Physics 10, 11 and 12	.....	Chemistry 4 Spanish 1	Chemistry 4
	Tuesday	Mathematics 5	.....	Physics 2 and 3	German 4	Chemistry 4 Spanish 1	Chemistry 4
	Wednesday	Mathematics 5	Physics 10, 11 and 12	Military Science	History 1 or 4	Chemistry 4 Spanish 1	Chemistry 4
	Thursday	Mathematics 5 Zoölogy 1	Zoölogy 1	Physics 2 and 3	German 4	History 1 or 4	History 1 or 4
	Friday	Mathematics 5	History 1 or 4	History 1 or 4	History 1 or 4	Zoölogy 1	Zoölogy 1
	Saturday	Mathematics 5	Physics 10, 11 and 12	Physics 2 and 3	German 4	.....	.....
	Monday	Zoölogy 2	Zoölogy 2	Physics 13	Philosophy 1	Chemistry 4 Spanish 2	Chemistry 4
Second..	Tuesday	Mathematics 6	Military Science	Physics 4 & 5	German 5	Chemistry 4	Chemistry 4
	Wednesday	Mathematics 6 Drawing 11	History 2 or 5 Drawing 11	Physics 13	Philosophy 1	Chemistry 4 Spanish 2	Chemistry 4
	Thursday	Mathematics 6	Zoölogy 2	Physics 4 & 5	German 5	History 2 or 5	History 2 or 5
	Friday	Mathematics 6 Drawing 11	Drawing 11	.....	History 2 or 5	Zoölogy 2	Zoölogy 2
	Saturday	Mathematics 6	Physics 13	Physics 4 & 5	German 5	.....	.....
	Monday	Military Science	Drawing 12	Drawing 12	History 3 or 6	Zoölogy 3 Chemistry 10 Spanish 3	Chemistry 10 Zoölogy 3
	Tuesday	Mathematics 7	Political Science 1	Physics 5	German 6	Chemistry 10 Zoölogy 3	Chemistry 10 Zoölogy 3
Third....	Wednesday	Mathematics 7	Political Science 1	Drawing 12 Philosophy 2	Drawing 12	Chemistry 10 Spanish 3	Chemistry 10 Zoölogy 3
	Thursday	Mathematics 7	Political Science 1	Zoölogy 3 Physics 5	German 6	History 3 or 6	History 3 or 6
	Friday	Mathematics 7	Political Science 1	Philosophy 2 Drawing 12	Drawing 12	History 3 or 6 Zoölogy 3	History 3 or 6 Zoölogy 3
	Saturday	Mathematics 7	Political Science 1	Physics 5	German 6	.....	.....
	Monday	Mathematics 7	Political Science 1	.....	.....	.....	.....
	Tuesday	Mathematics 7	Political Science 1	.....	.....	.....	.....

GENERAL COURSE.—JUNIOR CLASS.

TERM	Day	8-9	9-10	10-11	11-11.50	1.30-2.30	2.30-4
First . . .	Monday	.....	.....	Geology 2	French 4	Chemistry 4 or 10 Spanish 1	Chemistry 4 or 10 Physics 6
	Tuesday	Drawing 13 Chemistry 6	Drawing 13	History 7	Philosophy 3	Chemistry 4 or 10 Spanish 1	Chemistry 4 or 10 Physics 6
	Wednesday	Chemistry 6	Mathematics 8	Geology 2	French 4	Chemistry 4 or 10 Spanish 1	Chemistry 4 or 10 Physics 6
	Thursday	Military Science 2	.....	History 7	Philosophy	Drawing 18	Physics 6 Drawing 13
	Friday	Drawing 13 Chemistry 6	Drawing 13 Mathematics 8 Geology 2	Geology 2 History 7 Geology 2	French 4 Philosophy 3 Geology 2	History 7	History 7
	Saturday	.....	.....	.....	.....	.....	.....
Second..	Monday	English 7	.....	History 8	French 5	Chemistry 4 or 11 Spanish 2	Chemistry 4 or 11 Physics 7
	Tuesday	English 4	Philosophy 4	Political Science 4 or 6	.....	Chemistry 4 or 11 Spanish 2	Chemistry 4 or 11 Physics 7
	Wednesday	Chemistry 7	Mathematics 9	History 8	French 5	Chemistry 4 or 11 Spanish 2	Chemistry 4 or 11 Physics 7
	Thursday	English 4	Philosophy 4	Political Science 4 or 6	.....	Drawing 14	Physics 7 Drawing 14
	Friday	Chemistry 7	Mathematics 9	History 8	French 5	Drawing 14	Drawing 14
	Saturday	Military Science	Philosophy 4	Political Science 4 or 6	English 4	.....	.....
Third....	Monday	.....	Geology 1	Political Geology 1	French 6	Chemistry 10 or 11 Spanish 3	Chemistry 10 or 11 Physics 8
	Tuesday	Philosophy 5 or 6	Military Science	English 5	Political Science 5 or 7	Chemistry 10 or 11 Spanish 3	Chemistry 10 or 11 Physics 8
	Wednesday	History 9	Geology 1	Geology 1	French 6	Chemistry 10 or 11 Spanish 3	Chemistry 10 or 11 Physics 8
	Thursday	Philosophy 5 or 6	.....	English 5	Political Science 5 or 7	Drawing 15	Drawing 15
	Friday	History 9	Geology 1	Geology 1	French 6	Drawing 15	Drawing 15
	Saturday	Philosophy 5 or 6	Drawing 15	Drawing 15	Political Science 5 or 7	.....	.....

GENERAL COURSE.—

TERM	Day	8-9	9-10	10-11
Fall	Monday	.....	.....	French 7
	Tuesday	.....	Political Sci. 2 & 3	English 6
	Wednesday	German 7	Political Sci. 2 & 3	French 7
	Thursday	.....	Political Sci. 2 & 3	English 6
	Friday	German 7	.....	French 7
	Saturday	.....	Political Sci. 2 & 3	.....
Winter..	Monday	.....	Mathematics 6	French 8
	Tuesday	.....	Philosophy 4	Political Sci. 4 or 6
	Wednesday	German 8	Mathematics 10	French 8
	Thursday	.....	Philosophy 4	Political Sci. 4 or 6
	Friday	German 8	Mathematics 10	French 8
	Saturday	.....	Philosophy 4	Political Sci. 4 or 6
Spring..	Monday	.....	Mathematics 11	French 9
	Tuesday	Philosophy 5 or 6	.....	Meteorology 1
	Wednesday	German 9	Mathematics 11	French 9
	Thursday	Philosophy 5 or 6	.....	Meteorology 1
	Friday	German 9	Mathematics 11	French 9
	Saturday	Philosophy 5 or 6	.....	Meteorology 1

SENIOR CLASS.

Day	11-11.50	1.30-2.30	2.30-4
Monday	.....	Drawing 16	Drawing 16
	.....	Botany 5	Botany 5
	.....	Zoölogy 11	Zoölogy 4
	.....	Chemistry 10 or 11	Chemistry 10 or 11
	.....	Spanish 1	.....
Tuesday	Philosophy 3	Drawing 16	Drawing 16
	.....	Botany 5	Botany 5
	.....	Zoölogy 11	Zoölogy 4
	.....	Chemistry 10 or 11	Chemistry 10 or 11
	.....	Spanish 1	.....
Wednesday	.....	Drawing 16	Drawing 16
	.....	Botany 5	Botany 5
	.....	Zoölogy 11	Zoölogy 4
	.....	Chemistry 10 or 11	Chemistry 10 or 11
	.....	Spanish 1	.....
Thursday	Philosophy 3	Zoölogy 11	Zoölogy 4
Friday	Political Science 2 or 3	.....	.....
Saturday	Philosophy 3	.....	.....
Monday	.....	Chemistry 11	Chemistry 11
	.....	Zoölogy 12	Zoölogy 12
	.....	Botany 6	Botany 6
	.....	Drawing 17	Drawing 17
	.....	Spanish 2	.....
Tuesday	English 8	Chemistry 11	Chemistry 11
	.....	Zoölogy 12	Zoölogy 12
	.....	Botany 6	Botany 6
	.....	Drawing 17	Drawing 17
	.....	Spanish 2	.....
Wednesday	.....	Chemistry 11	Chemistry 11
	.....	Zoölogy 12	Zoölogy 12
	.....	Botany 6	Botany 6
	.....	Drawing 17	Drawing 17
	.....	Spanish 2	.....
Thursday	English 8	.....	.....
Friday	.....	.....	Mathematics 6
Saturday	English 8	.....	.....
Monday	.....	Chemistry 11	Chemistry 11
	.....	Zoölogy 13	Zoölogy 13
	.....	Botany 7	Botany 7
	.....	Drawing 18	Drawing 18
	.....	Spanish 3	.....
Tuesday	Political Science 5 or 7	English 9	English 9
	.....	Spanish 3	.....
Wednesday	English 9	Chemistry 11	Chemistry 11
	.....	Zoölogy 13	Zoölogy 13
	.....	Botany 7	Botany 7
	.....	Drawing 18	Drawing 18
	.....	Spanish 3	.....
Thursday	Political Science 5 or 7	.....	.....
Friday	English 9	Chemistry 11	Chemistry 11
	.....	Zoölogy 13	Zoölogy 13
	.....	Botany 7	Botany 7
	.....	Drawing 18	Drawing 18
Saturday	Political Science 5 or 7	.....	.....

	Exercises per week.
Horticulture 1	3
Agriculture 1	3
Agriculture 18	3
Military Science	1

WINTER TERM.

Mathematics 13	3
English 2	2
Shop Work 12	3
Chemistry	3
Botany 2	2
Horticulture 3	3
Military Science	1

SPRING TERM.

Shop Work 13	3
English 3	1
Physics 14	3
Botany 3	3
Dairying 1	5
Military Science	1

COURSE OF STUDY FOR SECOND YEAR OF TWO-YEAR COURSE.

FALL TERM.

	Exercises per week.
Zoölogy 1	3
Botany 4	2
Horticulture 2	1
Horticulture 4	3
Physics 15	3
Agriculture 7	3
Agriculture 2	3
Military Science	1

WINTER TERM.

Zoölogy 2	3
Agriculture 3	3
Agriculture 5	3
Agriculture 8	3
Forestry 1	3
Agriculture 11	4
Military Science	1

COLLEGE OF AGRICULTURE

SPRING TERM.

	Exercises per week.
Zoölogy 3	4
Horticulture 2	2
Horticulture 5	3
Agriculture 12	3
Agriculture 4	3
Agriculture 13	4
Military Science	1

SCHEDULE OF HOURS FOR TWO-YEAR COURSE.

FIRST YEAR—FALL TERM.

Day	8-9	9-10	10-11	11-12	1.30-2.30	2.30-4
Monday.....	.....	Mathematics 12	.....	Agriculture 18	Horticulture 1	Horticulture 1
Tuesday.....	English 11	Mathematics 12	Military Science	Agriculture 18	Botany 1	Botany 1
Wednesday....	English 1	Agriculture 1	.....	Horticulture 1	Botany 1	Botany 1
Thursday.....	English 11	.....	Agriculture 1	Horticulture 1	Botany 1	Botany 1
Friday.....	English 1	Mathematics 12	Agriculture 1	Agriculture 1	Agriculture 18	Agriculture 18
Saturday.....	English 11	.....	.....	.....	.....	.....

WINTER TERM.

Monday.....	.....	Horticulture 3	Horticulture 3	Horticulture 3	Botany 2	Botany 2
Tuesday.....	.....	Chemistry	.....	Mathematics 13	Botany 2	Botany 2
Wednesday....	English 2	Horticulture 3	.....	Mathematics 13	Shop-work 12	Shop-work 12
Thursday.....	.....	Chemistry	Military Science	Mathematics 13	Shop-work 12	Shop-work 12
Friday.....	English 2	Horticulture 3	Horticulture 3	Horticulture 3	Shop-work 12	Shop-work 12
Saturday.....	.....	Chemistry	.....	.....	.....	.....

SPRING TERM.

Monday.....	Dairy 1	Dairy 1	Dairy 1	Physics 14	Shop-work 13	Shop-work 13
Tuesday.....	Dairy 1	Dairy 1	Botany 3	Botany 3	.....	.....
Wednesday....	Dairy 1	Dairy 1	Dairy 1	Physics 14	Shop-work 13	Shop-work 13
Thursday.....	Dairy 1	Dairy 1	Botany 3	Botany 3	.....	.....
Friday.....	Military Science	English 3	.....	Physics 14	Shop-work 13	Shop-work 13
Saturday.....	Dairy 1	Dairy 1	Botany 3	Botany 3	.....	.....

SCHEDULE OF HOURS FOR TWO-YEAR COURSE

SECOND YEAR.—FALL TERM.

Day	8-9	9-10	10-11	11-12	1.30-2.30	2.30-4
Monday.....	Zoölogy 1	Zoölogy 1	Physics 15	Horticulture 4	Agriculture 2	Agriculture 2
Tuesday.....	Agriculture 7	Botany 4	Botany 4	Agriculture 2	Horticulture 4	Horticulture 4
Wednesday..	Agriculture 7	Physics 15	Military Science	Agriculture 2	Horticulture 4	Horticulture 4
Thursday.....	Zoölogy 1	Zoölogy 1	.....	Physics 15	Agriculture 7	Agriculture 7
Friday.....	Botany 4	Botany 4	Horticulture 2	Horticulture 2	Zoölogy 1	Zoölogy 1
Saturday.....	.....	.....	.....	.....	.....	.....

WINTER TERM.

Monday.....	Zoölogy 2	Zoölogy 2	.....	Agriculture 11	Agriculture 3	Agriculture 3
Tuesday.....	Agriculture 8	.....	Military Science	Forestry 1	Agriculture 11	.....
Wednesday..	Agriculture 8	Agriculture 5	Agriculture 3	Agriculture 11	Forestry 1	Forestry 1
Thursday.....	Zoölogy 2	Zoölogy 2	.....	Forestry 1	Agriculture 8	Agriculture 8
Friday.....	.....	Agriculture 5	Agriculture 3	Agriculture 11	Zoölogy 2	Zoölogy 2
Saturday.....	.....	Agriculture 5	.....	.....	.....	.....

SPRING TERM.

Monday,	Military Science	Horticulture 2	Horticulture 2	Agriculture 4	Zoölogy 3	Zoölogy 3
Tuesday	Horticulture 5	Horticulture 5	Agriculture 13	Agriculture 4	Horticulture 2	Horticulture 2
Wednesday ..	.....	.....	Agriculture 13	.....	Zoölogy 3	Zoölogy 3
Thursday.....	Agriculture 12	Horticulture 5	Zoölogy 3	Agriculture 13	Agriculture 4	Agriculture 4
Friday	Agriculture 12	.....	Agriculture 13	Agriculture 13	Zoölogy 3	Zoölogy 3
Saturday	Agriculture 12	Horticulture 5	Horticulture 5	Horticulture 5	.....	.....

TEN WEEKS' COURSE IN AGRICULTURE.

The college offers a Winter Course in Agriculture, beginning Tuesday, January 10, and continuing until Friday, March 17, 1905.

No entrance examinations are required, but students taking the course must possess a good common school education. The course is especially desirable for students of mature years.

The courses of study offered are dairying, stock-feeding, principles of breeding, breeds of sheep and swine, wood-working, soil physics, greenhouse management, forestry, botany, and entomology, together with practical work in the creamery, work-shop, and greenhouses.

A fee of five dollars will be charged for tuition.

The expenses of the course may be estimated as follows:

Room and board, ten weeks, at \$4 . . .	\$40.00
Tuition fee	5.00
Books	5.00
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Total	\$50.00

Applicants should report at the president's office, Thompson Hall, on Tuesday, January 10, 1905.

TEN WEEKS' COURSE IN DAIRYING OR DAIRY SCHOOL.

The tenth annual Dairy School of the New Hampshire College of Agriculture and the Mechanic Arts will open on Tuesday, January 10, and continue ten weeks, closing on March 22. The object of this school is to furnish a broad and substantial foundation for those who would become successful creamery managers or dairy farmers. In other words, it offers a short route to a successful career that must otherwise require years of experience to attain. The subjects taught have a practical bearing on the every-day affairs connected with the various branches of the dairy industry.

TUITION, EXPENSES, ETC.

There is no age limit for students, and no entrance examination is required. A tuition fee of five dollars is payable at the beginning of the term; other expenses, including books, room, and board for ten weeks will amount to approximately sixty dollars.

Owing to the limited space for class work in the dairy building, the number of students must necessarily be limited to the twelve men who first make application for admission.

A detailed description of the studies offered is here given.

Students completing the required work of the Dairy School and passing satisfactory examinations in all subjects will be given a certificate.

For further information address:

New Hampshire College of Agriculture and the Mechanic Arts, Durham, N. H.

DAIRY BUILDING AND EQUIPMENT.

The dairy building is a wooden structure of one and one half stories with basement. It is divided into rooms for testing, separating, and churning. There is also an engine room and an office for the dairy instructor.

All available space is occupied by the various forms of separators, milk testers, milk coolers, churns, butter-workers, etc. Dairy students will be taught to use the United States, DeLaval, Empire, Sharples, and other cream separators. The latest apparatus for pasteurizing milk and cream, and the more modern churns and butter-workers will be available for students' use. An ice-cream plant has recently been installed. The most approved appliances for milk testing form a part of the regular equipment. Steam power is supplied by the large boilers at the power house. In addition to the product of the college herd, milk and cream are received from about thirty farms in Durham and vicinity. Through this arrangement the college furnishes plenty of milk for practice work, and provides for a complete and practical training in creamery and dairy management.

MILK AND ITS PRODUCTS.

Instructor Ivan C. Weld.

Lectures and recitations on the secretion, nature, and composition of milk, its uses and value as an article of food. It also deals with causes and conditions influencing the quality of milk and the care of milk on the farm.

Class-room work is supplemented by daily practice in the creamery. The student is trained to perform all parts of the work and to thoroughly understand the details that make possible the production of fine butter.

Instruction in ice-cream making will include the selection of cream, its preparation for freezing, the selection and preparation of flavors, the packing for shipment, the making of ice-cream bricks, and a consideration of the various influences affecting quality, yield, etc.

DAIRY MECHANICS.

Instructor Ivan C. Weld.

Lectures will be given on the construction, operation, and care of the various appliances used in the dairy or creamery. Each student will be required to take apart and assemble the various machines, operate them carefully and efficiently, and present a written description of each machine and the result of his investigations with special reference to capacity, speed, and outfit, and to perform other duties required of creamery and dairy managers.

MILK TESTING.

Instructor Ivan C. Weld.

The use of the Babcock test in apportioning the money value of milk is now regulated by state law, and the value of the test in the successful management of the dairy herd has created a demand for practical training. The course will include lectures and recitations on the history and principles of the Babcock test and its application on the dairy farm and in the creamery or milk inspector's laboratory. A careful study of all its details will be required. Under the guidance of the instructor the student will practice testing milk, cream, skim-milk, and buttermilk until fully competent to perform the work for himself or for others. In connection with the lactometer the test will be made the subject of practice in estimating the solids of milk.

CHEMISTRY OF MILK AND BUTTER.

Professor Fred W. Morse.

The subject is taken up in a course of ten lectures, illustrated by experiments and specimens, and includes the properties and separation of the different constituents of milk, fat, casein, albumen, sugar, etc., the composition of butter and butter-fat, and the properties and effects of preservatives.

DAIRY BACTERIOLOGY.

Instructor Ivan C. Weld.

Lectures, recitations, and demonstrations, covering the more important facts in the relation of bacteria to dairying, with instruction and practice in pasteurizing milk and cream for market or butter making and in preparing and using cultures in ripening cream.

CREAMERY AND DAIRY MANAGEMENT.

Instructor Ivan C. Weld.

Students are taught the method of keeping creamery and dairy accounts, and will be required to present sample accounts covering a period of one month. Plans of dairy buildings and creameries will also be required, with estimates for building and equipment.

BOILERS AND ENGINES.

Instructor E. H. Hancock.

Lectures will be given on the construction, operation, and care of boilers, motors, steam, and gasoline engines. The lectures will be followed by practical demonstrations and practice in the management of the various motive powers.

INSECTS AFFECTING CATTLE.

Professor E. Dwight Sanderson.

Lectures on the horn-fly, warble-fly, cattle lice, and similar pests, with especial reference to their life histories and methods of combating them.

BREEDS AND BREEDING.

Assistant Professor E. L. Shaw.

Lectures and recitations upon the origin, history, distribution, characteristics, adaptability, and standard of excellence of the pedigreed breeds of dairy cattle, with special reference to the selection of breeds and individual animals for the dairy herd.

Lectures and recitations upon the principles of breeding

as exhibited through the laws of heredity, variation, and selection; methods of breeding, including a discussion of in-breeding, cross-breeding, and influence of environment.

Practice in judging the dairy breeds.

FEEDS AND FEEDING.

Assistant Professor E. L. Shaw.

Lectures and recitations upon the composition and digestibility of feeding stuffs; the preservation and preparation of coarse fodders, ensilage; grinding, steaming, and cooking food. A careful study of the different feeds upon the market and their value in a dairy feeding ration. Practice will be given in computing and compounding rations for the dairy cow.

DISEASES OF CATTLE.

Assistant Professor E. L. Shaw.

Lectures and recitations upon the anatomy of the cow, with special reference to the digestive, reproductive, and milk-producing organs, the common diseases, the causes, and the methods of treatment.

AGRICULTURAL EXPERIMENT STATION.

This department of the college is provided for by the National Government, at an annual expense of fifteen thousand dollars.

The Act of Congress provides,—

“That it shall be the object and duty of said Experiment Stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping, as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories.”

COMMENCEMENT, 1904.

On Commencement Day, June 4, 1904, the following degrees were conferred:

BACHELORS OF SCIENCE.

IN AGRICULTURE.

Leander Ashton, Pittsfield.
Percy Anderson Campbell, Litchfield.
Carrol Winfred Farr, North Weare.
Joseph Ezra Goodrich, New Durham.
Arthur Ronello Merrill, North Bridgton, Me.

IN MECHANICAL ENGINEERING.

George Herbert Hill, La Crosse, Wisconsin.
Thomas Jefferson Laton, Nashua.
Samuel Ambrose Richardson, Charlestown.

IN ELECTRICAL ENGINEERING.

Walter Allen Barker, Pittsfield.
Raymond Louis Lunt, Dover.

UNCLASSIFIED.

Edgar Charles Bickford, Durham.

HONORARY DEGREES.

The degree of M. Sc. was conferred upon—

Hon. George A. Wason, trustee 1883-1904; President of the Board of Trustees, 1897-1904.

And upon the following ex-trustees of the college:

Frederick P. Comings, B. S., Tacoma, Washington, alumni trustee, 1893-1903.

Albert DeMeritt, Esq., Durham, N. H., trustee 1892-1895.

CERTIFICATES.

Certificates from the Two Years' Course in Agriculture were awarded to—

Erland Graves Batchelder, Wilton.

Wesley Pillsbury Flint, Newburyport, Mass.

Henry Marston Shurbert, Northwood Ridge.

PRIZE RECORD FOR 1904.

SMYTH PRIZES.

GIVEN BY MRS. MARIAN C. SMYTH.

Speaking:—

1st, \$20. HARRY U. RUSSELL, '05. 2d, \$15, CASTINE C. SWANSON, '05. 3d, \$10, WARREN C. HAYES, '05.

Reading:—

1st, \$15, NEIL S. FRANKLIN, '06. 2d, \$10, WM. S. GOOCH, '07.

BAILEY PRIZE — \$10.

GIVEN BY DR. C. H. BAILEY OF THE CLASS OF '79, AND E. A. BAILEY OF THE CLASS OF '85.

RAYMOND LOUIS LUNT.

ERSKINE MASON MEMORIAL PRIZE.

LEANDER ASHTON.

SENIOR STANDING HIGHEST IN THE MILITARY DEPARTMENT.

THOMAS J. LATON.

WINNER OF INDIVIDUAL PRIZE DRILL.

W. E. MURCHIE, '07.

HONORABLE MENTION.

ANDREW BROGGINI, '07.

PRIZE SWORD—EXCELLENCE IN DRILL.

J. W. MORETON, '05.

Valentine Smith Scholarships are held by

WILLIAM O. ROBINSON, '05.

J. GLENN POWERS, '07.

JOHN D. CLARK, '06.

W. W. KIRKPATRICK, '08.

ROSTER OF BATTALION.

FOR 1904 - 1905.

MAJOR and ACTING COMMANDANT ELMER S. SAVAGE.

COMPANY A.

CAPT. C. O. DODGE.
1ST LIEUT. F. H. HEATH.
2D LIEUT. W. C. CAMPBELL.

SERGEANTS.

1st SERGT. N. S. FRANKLIN.
SERGT. E. J. ROBERTS.
SERGT. L. K. BARNES.
SERGT. C. S. BATCHELDER.
SERGT. R. E. GOWEN.

CORPORALS.

A. G. WEEKS.
F. W. RANDALL.
A. BROGGINI.
B. C. ABBOTT.
L. D. BATCHELOR.

MUSICIAN.

P. R. BERRY.

COMPANY B.

CAPT. J. W. MORETON.
1ST LIEUT. H. U. RUSSELL.
2D LIEUT. M. A. PIKE.

SERGEANTS.

1st SERGT. E. L. CONVERSE.
SERGT. A. M. JOHNSON.
SERGT. W. C. SMALL.
SERGT. R. V. SWAIN.
SERGT. W. E. MURCHIE.

CORPORALS.

J. G. POWERS.
F. D. LANE.
A. L. SMITH.
J. H. PRIEST.
C. A. DODGE.

MUSICIAN.

M. G. BUSS.

STUDENTS.

a—Agricultural Course; *c*—Course in Technical Chemistry; *g*—General Course; *m e*—Mechanical Engineering; *e e*—Electrical Engineering; *u*—Unclassified. Sophomores in the Engineering Courses are designated by *e* only. Freshmen are not classified in courses.

SENIORS.

Name.	Residence.	Room.
Chesley, John Henry <i>e e</i>	<i>Rockingham.</i>	Kappa Sigma House.
Dodge, Cleon Orestes <i>c</i>	<i>Sunapee.</i>	Mrs. Sanders'.
Hayden, Silas Bryden <i>u</i>	<i>So. Natick, Mass.</i>	Kappa Sigma House.
Hayes, Harry Linwood <i>ee</i>	<i>Exeter.</i>	Exeter.
Hayes, Warren Chauncey <i>u</i>	<i>Durham.</i>	Mr. Hayes'.
Heath, Fred Harvey <i>c</i>	<i>Warner.</i>	Prof. Scott's.
Knight, Harold Nims <i>a</i>	<i>Marlborough.</i>	Mr. Schoonmaker's.
Mudgett, Orlo Dudley <i>e e</i>	<i>Gilmanton.</i>	Zeta House.
Pettee, Horace James <i>e</i>	<i>Durham.</i>	Prof. Pettee's.
Pike, Mahlon Arthur <i>u</i>	<i>Dover.</i>	Miss Berry's.
Putney, Fred Silver <i>a</i>	<i>Hopkinton.</i>	Prof. Scott's.
Randall, John Leslie <i>a</i>	<i>Lee.</i>	Lee.
Robinson, William Orrin <i>c</i>	<i>Marlborough.</i>	Pettee's Block.
Russell, Harry Union <i>g</i>	<i>West Derry.</i>	Miss Berry's.
Savage, Elmer Seth <i>a</i>	<i>Lancaster.</i>	Kappa Sigma House.
Swanson, Castine Caroline <i>g</i>	<i>Cambridge, Mass.</i>	Prof. Sanderson's.

JUNIORS.

Adams, Samuel Taylor <i>e e</i>	<i>Pittsfield.</i>	Zeta House.
Barnes, Stuart Kendrick <i>c</i>	<i>Walpole.</i>	Pettee's Block.
Batchelder, Charles S. <i>a</i>	<i>So. Hampton.</i>	Nesmith Hall.
Campbell, Willis Cassius <i>c</i>	<i>West Windham.</i>	Kappa Sigma House.
Clark, John Dustin <i>g</i>	<i>Nashua.</i>	Kappa Sigma House.
Converse, Ernest Luther <i>g</i>	<i>Amherst.</i>	Mr. Sawyer's.
Franklin, Neil Starr <i>e e</i>	<i>Bernardston, Mass.</i>	Kappa Sigma House.
Gooch, William Safford <i>e e</i>	<i>Exeter.</i>	Exeter.
Gowen, Ralph Edward <i>m e</i>	<i>Stratham.</i>	The Mystic.
Moreton, Joseph Wesley <i>e e</i>	<i>Medford, Mass.</i>	Zeta House.
Roberts, Edwin Jay <i>c</i>	<i>Laconia.</i>	Dr. Grant's.

Name.	Residence.	Room.
Small, William Clifford, Jr., <i>m e</i>	<i>Nashua.</i>	Kappa Sigma House.
Swain, Roy Vance <i>m e</i>	<i>Barrington.</i>	Mrs. Sanders'.
Tinkham, Frank Alvin <i>a</i>	<i>Grafton.</i>	Prof. Parsons'.

SOPHOMORES.

Abbott, Burt Carleton <i>a</i>	<i>Tilton.</i>	Thompson Hall.
Batchelor, Leon Dexter <i>a</i>	<i>West Upton, Mass.</i>	Kappa Sigma House.
Berry, Philip Ray <i>e</i>	<i>Alton.</i>	Miss Berry's.
Broggini, Andrew <i>e</i>	<i>Concord.</i>	Mr. Schoonmaker's.
Campbell, Samuel Francis <i>a</i>	<i>West Windham.</i>	Kappa Sigma House.
Clement, Clarence Elbert <i>a</i>	<i>Derry.</i>	Mr. Meserve's.
Dickey, Harold Hurst <i>g</i>	<i>Manchester.</i>	Kappa Sigma House.
Dodge, Carl Austin <i>c</i>	<i>New Boston.</i>	Kappa Sigma House.
Fuller, Carl Tilson <i>c</i>	<i>Nashua.</i>	Zeta House.
Handy, Waylon Lester <i>a</i>	<i>Swanzy.</i>	Zeta House.
Hardy, Edwin Davis <i>m e</i>	<i>Nashua.</i>	Zeta House.
Ingham, Harry Edward <i>e</i>	<i>Nashua.</i>	Kappa Sigma House.
Jenness, Cyrus Fremont <i>a</i>	<i>Gonic.</i>	Kappa Sigma House.
Johnson, Allen Montague <i>e</i>	<i>Nashua.</i>	Zeta House.
Lane, Frank Davis <i>e</i>	<i>Manchester.</i>	Kappa Sigma House.
Littlefield, Ralph Albion <i>a</i>	<i>Portsmouth.</i>	Mrs. H. Mathes'.
Mooar, Mary Louisa <i>g</i>	<i>Manchester.</i>	Miss Berry's.
Murchie, William Ewart <i>e</i>	<i>Concord.</i>	Kappa Sigma House.
Noyes, Bernard C. <i>a</i>	<i>Landaff.</i>	Thompson Hall.
Powers, John Glenn <i>a</i>	<i>Concord.</i>	Mr. Schoonmaker's.
Purrington, Wallace Fuller <i>c</i>	<i>So. Yarmouth, Mass.</i>	Zeta House.
Randall, Frank Wiggin <i>e</i>	<i>Portsmouth.</i>	Mr. Wentworth's.
Smith, Arthur Leon <i>e</i>	<i>Portsmouth.</i>	Pettee's Block.
Snow, Ezra David <i>e</i>	<i>Whitefield.</i>	Pettee's Block.
Stockwell, Franklin Emmons <i>a</i>	<i>Lancaster.</i>	Zeta House.
Townsend, Ellice Storrs <i>g</i>	<i>Lebanon.</i>	Miss Berry's.
Tuttle, Charles Leo	<i>Exeter.</i>	Exeter.
Watson, Lucia Soule <i>g</i>	<i>Durham.</i>	Mr. D. W. Watson's.
Woodward, Arthur Jason <i>e</i>	<i>Lancaster.</i>	Pettee's Block.

FRESHMEN.

Allen, Lloyd Jay	<i>Tilton.</i>	Zeta House.
Atwell, Robert King	<i>Portsmouth.</i>	The Mystic.
Bailey, Emery Ward	<i>Suncook.</i>	Mr. Schoonmaker's.
Barton, Arthur Hosea	<i>Newport.</i>	The Mystic.
Batchelder, Arthur Milliken	<i>Suncook.</i>	Zeta House.

Name.	Residence.	Room.
Batchelder, Henry Edward	<i>Exeter.</i>	Exeter.
Beecher, Henry Ward	<i>New Salem, Mass.</i>	The Mystic.
Belleville, William Edward a	<i>Hinsdale.</i>	Zeta House.
Buss, Minot Giles	<i>Wilton.</i>	Mr. Schoonmaker's.
Carlisle, Lawrence Andrew	<i>Exeter.</i>	Exeter.
Cash, James Dennis	<i>Massabesic.</i>	The Mystic.
Chase, Fred Odell	<i>Warner.</i>	Pettee's Block.
Chesley, Mary Abbie	<i>Lee.</i>	Lee.
Chesley, Wilbur Lemuel	<i>Farmington.</i>	Mr. Wentworth's.
Clough, Francis	<i>Contoocook.</i>	Mr. Schoonmaker's.
Cone, Charles Francis	<i>Nashua.</i>	Zeta House.
Converse, Albert William	<i>Amherst.</i>	Mr. Sawyer's.
Croghan, John Timothy	<i>Concord.</i>	Mr. Schoonmaker's.
DeMeritt, Katharine	<i>Durham.</i>	Mr. Albert Demeritt's.
Evans, Walter Woods	<i>East Kingston.</i>	East Kingston.
Farwell, Oren Lovell	<i>Harrisville.</i>	Zeta House.
Fellows, Ernest Roslyn	<i>Exeter.</i>	Exeter.
French, Harry Fifield	<i>Plymouth.</i>	Mr. Edgerly's.
Gardner, Frederick Alberto	<i>Tilton.</i>	Zeta House.
Goodsoe, Paul Wesley	<i>Stratham.</i>	The Mystic.
Harrington, Annie Roberta	<i>Goffstown.</i>	Miss Berry's.
Hill, Stanley Fisk	<i>Nashua.</i>	Pettee's Block.
Howland, George Raymond	<i>Woodsville.</i>	Mr. Sawyer's.
Huse, Merritt Chase	<i>Concord.</i>	Mr. Schoonmaker's.
Jack, Charles Harrison	<i>Manchester.</i>	Mr. Chesley's.
Jeffers, Omer Smith	<i>Whitefield.</i>	Pettee's Block.
Kirkpatrick, William R.	<i>Nashua.</i>	Mr. Wentworth's.
Leonard, Thomas James	<i>Lancaster.</i>	Mr. Sawyer's.
Marshall, George Harnden	<i>Lancaster.</i>	Mr. Sawyer's.
Matthews, Charles Doane	<i>Portsmouth.</i>	Mr. Burnham's.
Neville, George Duncan	<i>New Boston.</i>	Mr. Schoonmaker's.
Nichols, Ernest Chase	<i>Hillsboro Bridgt.</i>	
O'Connor, John Joseph	<i>Portsmouth.</i>	Pettee's Block.
O'Grady, Augustus Michael	<i>Nashua.</i>	Zeta House.
Page, John Caleb	<i>Dover.</i>	Dover.
Parker, William Brackett	<i>Portsmouth.</i>	Mr. Burnham's.
Perley, George Arthur	<i>Goffstown.</i>	Prof. Pettee's.
Pettee, Sarah Elizabeth	<i>Durham.</i>	Prof. Pettee's.
Plummer, Carl Stevens	<i>Manchester.</i>	Kappa Sigma House.
Powers, Leon Tyler	<i>Tilton.</i>	Zeta House.
Smalley, Dean Fred	<i>Walpole.</i>	Pettee's Block.
Smith, Arthur Watts	<i>Hudson.</i>	Mr. Wentworth's.
Spooner, William Alfred	<i>New Salem, Mass.</i>	Mr. George DeMeritt's.
Springfield, Eugene	<i>Rochester.</i>	Mr. Stevens'.

Name.	Residence.	Room.
Stevens, Frederick Caverly	<i>Suncook.</i>	Pettee's Block.
Tarbell, Carl Brown	<i>Milton.</i>	Mr. Chesley's.
Thompson, Roscoe Leroy	<i>West Swanzey.</i>	The Mystic.
Wadleigh, Ray Emery	<i>Kensington.</i>	Mr. Chesley's.
Waite, George Lyman	<i>Dunbarton.</i>	Zeta House.
Walker, Harold Duncan	<i>Kittery, Me.</i>	Pettee's Block.
Webster, Walter Everett	<i>Kingston.</i>	Kingston.
Weeks, Albion G.	<i>Rochester.</i>	The Mystic.
Woodbury, James Lufkin	<i>Francestown.</i>	Brook Cottage.
Woodman, Francis Ward	<i>Milford.</i>	Mr. Burnham's.

TWO YEARS' COURSE.

SECOND YEAR.

Barney, Grover Lafayette	<i>Grafton.</i>	Mr. Stevens'.
Dunn, Arthur Garfield	<i>Harrisville.</i>	Zeta House.
Edmunds, Fred Sanborn		
Cleveland	<i>Chichester.</i>	Mr. Wentworth's.
Frost, Henry Walter	<i>Dublin.</i>	Pettee's Block.
Gowing, Henry Newton	<i>Dublin.</i>	Pettee's Block.
Price, Amos Richardson	<i>Gilmanton Iron Works.</i>	Zeta House.

FIRST YEAR.

Anderson, Edwin Hazelton	<i>Chester.</i>	Mr. Bickford's.
Bartlett, Edmund Morrill	<i>Salisbury, Mass.</i>	Mr. Burnham's.
Coburn, Frank Milton	<i>Manchester.</i>	Mr. Chesley's.
Dimond, Oliver Carter	<i>West Concord.</i>	Mr. Edgerly's.
Forristall, Ralph Wayne	<i>Alstead.</i>	Pettee's Block.
Grimes, Frank Alfred	<i>Francestown.</i>	Brook Cottage.
Hargreaves, Stanley	<i>Durham.</i>	Mrs. Berry's.
Huckins, George Edwin	<i>New Hampton.</i>	Mr. S. Jenkins'.
Knowles, Charles Walker	<i>Gilmanton.</i>	Zeta House.
Lindquest, Eno Alexander	<i>No. Charlestown.</i>	Mr. L. Bunker's.
Locke, Elmer Walker	<i>Deering.</i>	Mrs. Berry's.
Norton, Percy Francis	<i>North Hampton.</i>	The Mystic.
Sanborn, Carl Jeremiah	<i>Pittsfield.</i>	
Sawyer, Robert Stanley	<i>Walpole.</i>	Pettee's Block.
Shuttleworth, Edwin Lewis	<i>Methuen, Mass.</i>	Pettee's Block.
Smith, Chellis Vielle	<i>Deerfield Centre.</i>	Mrs. Berry's.
Thompson, Frank Allen	<i>Pittsfield.</i>	The Mystic.
Wilson, John Spangler	<i>Deerfield.</i>	Mrs. Berry's.

SPECIAL COURSE.

Name.	Residence.	Room.
Adams, Waldo Lawrence	<i>Townsend, Mass.</i>	Mrs. Sanders'.
Carpenter, Harry W.	<i>Amherst.</i>	Mr. Sawyer's.
Flint, Wesley Pillsbury	<i>Newburyport, Mass.</i>	Zeta House.
Fowler, Clarence	<i>Durham.</i>	Mr. C. Fowler's.
Priest, James Harry	<i>Manchester.</i>	Mrs. J. Thompson's.

TEN WEEKS' COURSE.

AGRICULTURE.

Name.	Residence.
Jewett, Charles Lyman	<i>Middlebury, Vt.</i>

DAIRYING.

Name.	Residence.
Carter, Orson	<i>Hillsboro Bridge.</i>
Gunn, Arthur Elisha	<i>Keene.</i>
Howe, Ernest Leavitt	<i>East Barnard, Vt.</i>
Jewett, Alden Henry	<i>West Lynn, Mass.</i>
Lamothe, William G.	<i>Newfields.</i>
Murch, Ralph Herbert	<i>West Lebanon.</i>
Pike, George H.	<i>Hinsdale.</i>
Stevens, George Albert	<i>Lisbon.</i>
Taylor, Arthur Wilmer	<i>East Andover.</i>

SPECIAL SHORT COURSE.

Name.	Residence.	Study.
Meader, Dana William	<i>Rochester.</i>	Horticulture.
Rowse, George William, Jr.	<i>Montgomery, Vt.</i>	Dairying.

SUMMARY.

Seniors	16
Juniors	14
Sophomores	29
Freshmen	59
Students in Two Years' Course	24
Students in Ten Weeks' Course	10
Special Students	5
Special Short Course Students	2
Total	159

REGISTER OF GRADUATES.

BACHELORS OF SCIENCE.

NOTE.—The arrangement is: (a) Name in full. (b) Later degrees taken. (c) Residence at time of entering college. (d) Occupation, etc. (e) Present residence. *Dead. †Present address unknown. It is earnestly requested that each graduate inform the Secretary of the Faculty of any changes that should be made in this list.

1871.

- William Preston Ballard, Concord. Farmer.
R. F. D., Route 1, Concord.
 Lewis Perkins, Hampton. Contractor.
301 Lake Avenue, Newton Highlands, Mass.
 Charles Henry Sanders, Penacook. Merchant. *Penacook.*
 3—

1872.

- Edwin Bartlett, Bath. Ranchman and Stock Raiser.
Spearville, Ford Co., Kansas.
 Frank Alexander White, Bow. Surveyor, Farmer.
Route 4, Concord.
 2—

1873.

- †Frederick Erasmus Eldredge, Kensington.
 James Fred Smith, A. B., A. M. (Dartmouth, 1885; A. M., Stanford, 1900). Principal of High School. *Campbell, Cal.*
 Charles Henry Tucker, Plaistow. Carriage Woodworker.
24 Highland Street, Amesbury, Mass.
 3—

1874.

- Millard Fillmore Hardy, Rev., Nelson. Graduated Theo. Inst.,
 Ct., 1878. Clergyman. *East Jaffrey, N. H.*
 *Henry Abbott Sawyer, North Weare.
 2—*1

1875.

- Walton Herman Aldrich, M. D. (Univ. N. Y. City, 1880), Troy.
 Physician and Surgeon. *Marlborough.*
 †Frank Pierce Curtis. Grocer. *Fitchburg, Mass.*

Frank Veranus Emerson, Lebanon. Manager Emerson Edge
Tool Company Works. *Water St., East Lebanon.*

Charles Webster Hardy, M. D. (Mo. Med. Coll., 1881), Marl-
borough. Physician.

206 So. Main Street, Ottawa, Kansas.

Harvey Jewell, Winchester. Fruit Grower and Market Gardener.
Cromwell, Conn.

*Charles Ormille Leavitt, Lebanon.

*John Loney McGregor, D. D. S. (Phila. Dental Coll., 1877), M.
D. (Dartmouth, 1883), Whitefield.

Eliel Peck, Lebanon, Merchant. *Kimball, Stearns County, Minn.*

Ira William Ramsey, Walpole. *Walpole.*

Orlando Leslie Seward, Keene. Artist.

287 Church Street, Keene.

Emery Mason Willard, Harrisville. Druggist, 15 Union Street,
Boston, Mass. *109 Hewlett Street, Roslindale, Mass.*

11—*2

1876.

Herbert Cyril Aldrich, Troy. Insurance and Real Estate.

323 South Hill St., Los Angeles, California.

†Edmund Lawson Brigham, Jaffrey. Mechanic.

Joseph Warren Butterfield, Westmoreland. Farmer.

North Montpelier, Vt.

Arthur French Chamberlain, Westmoreland. Partner of Edson
Keith & Co., 132 Michigan Avenue, Chicago, Ill.

6542 Kimbark Avenue, Chicago, Ill.

Anson Ballard Cross, Holyoke, Mass. Contractor and Builder.
Wilmington, Vt.

Warren Webster Kimball, Troy. Merchant. *Troy.*

Daniel Deeth Parker, Fitzwilliam. With Heywood Bros. &
Wakefield Co.

Box 56, Gardner, Mass.

7—

1877.

Rollin Kirk Adair, Indian Territory. Hotel.

Chelsea, Indian Ter.

*Homer Brooks, M. D. (N. Y. Hom. Med. Coll., 1881), Franconia.

John Washington Carson, Mont Vernon. Farmer and Land
Surveyor. *Francestown.*

*Charles Otto Chubert, Troy.

*Charles Albert Edwards, LL. B. (Univ. of Iowa, 1880), Keene.
Keene.

*William Francis Flint, Richmond. Land Surveyor, Horticul-
turst, Forestry Expert. *Winchester.*

Clinton Camillus Hall, Westmoreland. Farmer.

East Westmoreland.

John Goodrich Henry, M. D. (Dartmouth, 1880), Chesterfield.
Physician. *15 Pleasant St., Winchendon, Mass.*

*Charles Pitkin Hollister, North Montpelier, Vt.

George Mirick Holman, M. D., Fitchburg, Mass. Teacher.

33½ Boylston St., Boston, Mass.

Charles Appleton Hubbard, Troy. Treasurer United Fruit
Company.

Board of Trade Building, 131 State Street, Boston, Mass.

Carlos Augustus Wheeler, East Calais, Vt. Bee Keeper and
Farmer. *Bracken, Comal Co., Texas.*

Everard Whittemore, Fitzwilliam. Insurance and Real Estate.
1½ River Street, Hudson, Mass.

13—*5

1878.

†Ezra Eastman Adams, Manchester.

*Elmer Kilburn, Marlow.

Charles Edward Record, Fitchburg, Mass. Contractor and
Builder. (Greenhouses a specialty.)

73 Green Street, Leominster, Mass.

3—*1

1879.

Charles Hardy Bailey, M. D. (Dartmouth, 1881). Physician.
39 East Broadway, Gardner, Mass., Station A.

Richard Clinton Chapin, Chicopee, Mass. With American
Writing Paper Company. *Holyoke, Mass.*

Lucius M. Cragin, Lempster. Farmer.

The Elms, Springfield, Vt.

*Nathaniel Cutler Holmes, Jaffrey.

Fred Charles Parker, Lempster. Commercial Traveler.

5 Liberty Street, Concord.

George Henry Wilkins, M. D. (N. Y. Hom. Med. Coll., 1883),
Amherst. Physician.

306 Walnut Street, Newtonville, Mass.

6—*1

1880.

Charles Harvey Hood, Derry. Milk Contractor.

49½ Rutherford Avenue, Boston, Mass.

1—

1881.

Edwin Thompson Aldrich, Troy. General Insurance Agent.

Bridgman's Block, Keene.

- Henry Lyman Barnard, Troy. Clerk. *Troy.*
 *George Jordan Boardman, Lawrence, Mass.
 Edwin Franklin Bristol, Harwinton, Conn. Miller and Farmer.
Ascutneyville, Vt.
 Artemas Terald Burleigh. Farmer. *Franklin.*
 Frank Dana Ely, Cavendish, Vt. With Vermont Marble Com-
 pany, Electrician. *Proctor, Vt.*
 Sanford Eugene Emery, LL. B. (Albany Law School, 1886),
 Proctorsville, Vt. Attorney-at-Law. *Proctorsville, Vt.*
 Charles Herbert Hazen, Hartford, Vt. Farmer and Market
 Gardener. *Bethlehem.*
 Frank P. Marston, Hartford, Vt. Real Estate and Investments.
White River Junction, Vt.
 William Augustus Megrath, M. D. (Dartmouth, 1886), Cavendish,
 Vt. Physician. *Loudon.*
 Fred Townsend Stanton, Strafford. Farmer. *Strafford Corner.*
 Victor Hugo Stickney, M. D. (Dartmouth, 1883), Tyson, Vt.
 Physician and Surgeon. *Dickinson, N. Dakota.*
 Samuel Austin Wallace, Ph. G. (Boston School of Pharmacy,
 1886), West Hartford, Vt. Druggist. *Crookston, Minn.*
 George Herbert Whitcher, Strafford. Director of the New
 Hampshire Agricultural Experiment Station, February 22,
 1888, to November 1, 1894; Professor of Agriculture of the
 New Hampshire College, June, 1887, to November 1, 1894.
 District Superintendent of Schools, August 1, 1900.

Berlin.

14—*1

1882.

- Harvey Lincoln Boutwell, LL. B. (Boston University, 1886), Hop-
 kinton. Attorney-at-Law, 209 Washington Street, Boston,
 Mass. *37 Pierce Street, Malden, Mass.*
 Dana Justin Bugbee, North Pomfret, Vt. Mining in Colorado.
North Pomfret, Vt.
 Robert Fletcher Burleigh, M. D. (Dartmouth, 1887), Franklin.
 Physician. *South Braintree, Mass.*
 La Forrest John Carpenter, Surry.
Cliff Street, Malden, Mass.
 Edwin Preston Dewey, Hanover. Civil Engineer.
City Hall, Long Beach, Cal.
 George Andrew Loveland, LL. B. (University of New York, 1886),
 Norwich, Vt. Section Director United States Weather
 Bureau. *1130 So. 20th St., Lincoln, Neb.*
 †John Wright Mason, Hanover.

Harlan Addison Nichols, Derry. County Physician.

San Elizario, Texas.

*Frank Elmer Thompson, Stark.

9—*1

1883.

†Elmore Ferdinand Arnold, M. D. (University City of New York, 1885.) Londonderry, Vt. Physician. *New York, N. Y.*

Frank Landor Bigelow, Proctorsville, Vt., Instructor in Mathematics and Sciences, Goddard Seminary, Barre, Vt., 1883-1886. Business. *Rutland, Vt.*

Frederick Stocks Birtwhistle, Troy. Electrical Engineer, Foreign Department General Electric Company, 44 Broad Street, N. Y. *Troy.*

Noice D. Bristol, Harwinton, Conn. Scenic Photographer.

Logan, Ohio.

Frederick Plummer Comings, Lee. Trustee New Hampshire College 1893-1903. Private business.

2310 North 29th Street, Tacoma, Wash.

Frank Harry Follansbee, Canaan. Railway Mail Clerk.

41 Sharon Street, West Medford, Mass.

Adams Clark French, M. D., D. O., Franklin Falls. Physician.

231 So. Hayne Street, Chicago, Ill.

James Edgar Gay, Tunbridge, Vt. Woolen Manufacturer.

Cavendish, Vt.

Elmer Daniel Kelley, Franklin Falls. Farmer and Business.

445 Central Street, Franklin Falls.

Alvah Benjamin Morgan, Canaan. Registered Druggist.

Woodstock, Vt.

William Lincoln Whittier, Deerfield. Foreman of Machine Shop.

121 Rantoul Street, Beverly, Mass.

Charles Minot Woodward, Hanover. Principal of School.

Rodgers, Bell Co., Texas.

12—

1884.

*Ernest Smith Cummings, Lee.

Fred Carlos Davis, South Reading, Vt. Lawyer, Dealer in Real Estate, and Farmer. *McKinley Block, Springfield, Vt.*

Sylvester Miller Foster, Riverhead, N. Y. Cashier Riverhead Bank, and Coal Dealer. *Riverhead, Suffolk County, N. Y.*

Herbert Harvey Kimball, M. S. (Columbian University, 1900), Hopkinton. Librarian and Climatologist, U. S. Weather Bureau. *Washington, D. C.*

Moses Bisbee Mann, Benton. Inspector of Customs.

Custom House, Boston, Mass.

George Milton Moore, Plymouth, Vt. Real Estate, Insurance
Agent. *Main St., Ludlow, Vt.*

Ziba Amherst Norris, Lyme. Dealer in Groceries and Pro-
visions, Wholesale and Retail.

*587-593 Washington Street, Dorchester. and 529-533 Dudley
Street, Roxbury, Mass. 32 Milville Avenue, Dorches-
ter, Mass.*

Edwin Chapin Thompson, Lee. Section Director U. S. Weather
Bureau. *5 Allen Street, San Juan, P. R.*

8—*1

1885.

George Ellsworth Adams, Weston, Vt. Merchant.

Vernal, Utah.

Ruel Seabury Alden, Lyme. Superintendent of College Farm,
1895-'97. Farm Superintendent.

Box 173, North Uxbridge, Mass.

Walter Eugene Angier, C. E. (Dartmouth, 1887), West Swanzey.
Resident Engineer, Thebes Bridge, Ill.

Office 50 78th Street, Chicago, Ill.

Edward Alonzo Bailey, West Swanzey. Chair Maker.

55 Pine Street, Keene.

†Phillips Greenleaf Bickford, Lyme.

Andrew Walter Brill, Riverhead, L. I. With North British and
Mercantile Fire Insurance Company, 76 William Street, New
York City. *Hempstead, N. Y.*

†Paul Cuff Brooks, Boston, Mass.

†Frank Jay Emerson, Epping.

Allen Hazen, Wilder, Vt. Consulting Engineer.

St. Paul's Building, 220 Broadway, N. Y.

George Mayo Mullins, Londonderry. Attorney-at-Law.

Fourth and Jefferson Streets, Papillon, Neb.

Albert Henry Wood, Lebanon. Associate Professor of Agricul-
ture, 1890-'94. Grain Merchant. *Framingham, Mass.*

11—

1886.

Frank Albert Davis, M. B., M. D. (Boston University School of
Medicine, 1897, 1898), South Lee. Physician.

815 Beacon Street, Boston, Mass.

James Ellsworth Harvey, Surry. Photographer.

Clinton, Mass.

Beleazar Stoianoff Ruevsky, Tirnovo, Bulgarie. Instructor in
Modern Languages in the State College, "St. Cyrille," Maitre
au Gymnase, "St. Cyrille," de Gouvernement, Tirnovo, Bul-
garie. *Sofia, Bulgaria.*

- Madison Templeton Thurber, M. D. (Dartmouth, 1890), Webster.
Physician. *95 Savin Hill Avenue, Boston, Mass.*
- Edward Hills Wason, New Boston. Attorney-at-Law. Solicitor
for Hillsborough County. *146 Main Street, Nashua.*
- George Pillsbury Wood, Lebanon. Draftsman in charge,
Bureau of Yards and Docks, Navy Department.
3407 Holmead Avenue, N. W., Washington, D. C.

6—

1887.

- William Sprague Currier, Norwich, Vt. Local Forecaster.
U. S. Weather Bureau Office, Toledo, Ohio.
- Arthur Woodbury Hardy, C. E. (Dartmouth, 1889), Hopkinton.
Manager Western Sprinkler Risk Association.
240 La Salle Street, Chicago, Ill.
- George Albert Sanborn, Rochester. Salesman for Grand Union
Tea Company. *Rochester.*
- Hiram Newton Savage, C. E. (Dartmouth), White River Junction,
Vt. Member Am. Soc. C. E.; Supervising and Consulting
Engineer United States Reclamation Service.
Commercial Club Building, Salt Lake, Utah.
- Bion Leland Waldron, Strafford. Official in charge U. S.
Weather Bureau.
U. S. Weather Bureau, Hannibal, Missouri.

5—

1888.

- *Melvin Burnside Carr, North Haverhill. Civil Engineer, B. E.
Ry. Co. *28 North Street, Medford, Mass.*
- Herbert Grant Davis, South Lee. General Manager Ogdensburg
Gas Company; General Manager Ogdensburg Power and
Light Company; General Manager Ogdensburg Street Rail-
way Company. *1 Ford Street, Ogdensburg, N. Y.*
- Edwin Chandler Gerrish, Webster. Assistant Paymaster for
Proprietors of the Locks and Canals on Merrimack River.
66 Broadway, Lowell, Mass.
- †William Nelson Hazen, C. E. (Dartmouth, 1890). Chief Drafts-
man for the Structural Iron and Steel Co., Bush Street and
B. & O. R. R. *Pittsburg, Penn.*
- Edward David O'Gara, Hanover. Farmer. *Hanover.*
- George Elmer Porter, M. D. (Dartmouth, 1892), Hartford, Vt.
Physician. *Marengo, Wayne Co., N. Y.*
- George Jonathan Sargent, Canterbury. Civil Engineer.
Canterbury.

John Warren Smith, M. S. (1900), Grafton. Section Director
U. S. Weather Bureau, in charge Columbus, Ohio, and of
Ohio Section. Special Lecturer in Meteorology at Ohio
State University. *16 East Broad Street, Columbus, Ohio.*
George Elwin Walker, Littleton. Farmer. *Littleton.*

8—*1

1889.

Fred Harvey Colby, Hopkinton. Fruit Grower.

Prosser, Wash.

†Linwood Carroll Gillis.

*Louis Jerome Hutchinson, Norwich, Vt.

John Lawrence Norris, Lyme. Norris Brothers, Groceries and
Provisions, 1673-1679 Washington Street, Boston; 529-535
Dudley Street, Roxbury; and 587-593 Washington Street,
Dorchester, Mass. President of the Dairy Association Com-
pany, Lyndonville, Vt.; Secretary and Treasurer of Photo
Fabric Company of America.

6 Worcester Square, Boston, Mass.

Charles Walter Earl Scott, Winchester. Mechanic.

Darrington, Wash.

David Elmer Stone, Hartford, Vt. Grain Merchant.

Framingham Center, Mass.

Fred Washburne, West Springfield. With Sargent & Co., Fore-
man of Foundry Department.

56 Carmel Street, New Haven, Conn.

7—*1

1890.

John Young Jewett, C. E. (Dartmouth, 1895), Gilford. Cement
Inspector, Reclamation Service, U. S. Geological Survey.

Chamber of Commerce Bldg., Denver, Colo.

†Joseph Franklin Preston, Hanover. Clerk.

Boston, Mass.

Elihu Quinby Sanborn, Webster. Machinist.

Contoocook.

Clarence Ira Slack, Norwich, Vt. Cashier.

51 North Market Street, Boston, Mass.

4—

1891.

Ernest Gowell Cole, Hampton. Postmaster. Merchant.

Hampton.

Russell Marden Everett, Chester. Lawyer.

172 Market Street, Newark, N. J.

Edward Payson Stone, Canaan Center. Farmer.

Orford, N. H.

3—

1892.

Percey Lovejoy Barker, C. E. (Dartmouth, 1894), Milford.
Acting Supt. of Bridges and Buildings.

Jersey Shore, Penn.

Fred Driggs Fuller, Hanover. Assistant Chemist, New York
Agricultural Experiment Station.

8½ Lyceum Street, Geneva, N. Y.

Arthur Benezette Hough, Lebanon. Dairy Farmer. *Lebanon.*

†Edward Monroe Stone, C. E. (Dartmouth, 1894). Marlborough.
Civil Engineer with Henry A. Wolcott.

4—

1893.

Wilton Everett Britton, Ph. D. (Yale, 1903), Keene. State
Entomologist and Entomologist of the Connecticut Agricultural
Experiment Station, and Lecturer Yale University.

296 McKinley Ave., New Haven, Conn.

Frank John Bryant, Enfield. Post-office Clerk. *Lebanon.*

Charles Elbert Hewitt, M. M. E. (Cornell, 1895), Hanover.
Electrical Engineer and Contractor.

13-21 Park Row Building, New York City.

Charles Lincoln Hubbard, M. E. (1895), Fitzwilliam. Heating
and Ventilating Engineer.

551 Boylston St., Boston, Mass.

Orrin Moses James, Northwood. Civil Engineer and Surveyor.
Northwood Narrows.

Arthur Whitmore Smith, M. S. (Wesleyan University, 1895),
Norwich, Vt. Assistant Professor of Physics, University
of Michigan. *Ann Arbor, Mich.*

6—

1894.

Bert Sargent Brown, Hanover. Farmer. *Hanover.*

Fred Willis Gunn, Keene. Farmer and Fruit Grower.

Keene.

Frederic William Howe, Hollis. Professor of Chemistry and
Dietetics, State Normal School, Framingham, Mass., and Sci-
entific Adviser for the Walker Gordon Laboratory Co.

793 Boylston Street, Boston, Mass.

3—

1895.

Frank Stanley Adams, Gilsum. With Vermont Farm Machine
Company. *56 Pine Street, Bellows Falls, Vt.*

Frank Clifton Britton, Keene. With the Sullivan Machinery Company of Claremont and Chicago (Costkeeping Department). *31 Chestnut Street, Claremont.*

†Henry Elmer Hill, Plainfield, Vt. With the Arizona Lumber Company.

Charles Arthur Trow, Mont Vernon. Chief Engineer, Irrigation Construction. *Hazen, Nevada.*

4—

1896.

Lewis Harris Kittredge, Keene. Treasurer and Manager of Peerless Motor Car Company.

Lisbon Street, Cleveland, Ohio

1—

1897.

Harlan Winifred Barney, Grafton. Business.

333 Walnut Street, Manchester.

Carrie Augustus Bartlett, Lee. Teacher. *South Lee.*

Mary Blaisdell Bartlett, Epping. Instructor Pinkerton Academy. *Derry.*

Walter French Buck, Manchester. Science Teacher, High School. *Pawtucket, R. I.*

Arthur Willard Colburn, Dracut, Mass. Farmer.

Dracut, Mass.

Carrie Lydia Comings, Durham. Teacher, Woonsocket High School. *94 Blackstone Street, Woonsocket, R. I.*

Irving Lyford Dennett. Chief Engineer, New York Glucose Company. *Edgewater, N. Y.*

*Mary Elizabeth Comings (Mrs. I. L. Dennett), Durham.

Elwin Henry Forristall, M. Sc. (1900, Columbia), Supt. Mass. Agricultural Coll. Farm. *Amherst, Mass.*

Leslie David Hayes, Durham. Instructor of Manual Training and Chemistry, Rayen School.

215 Arlington St., Youngstown, Ohio.

John Norton Hunt, Peterborough. *Peterborough.*

Ellery Dunbar Jenkins, Lee. Chemist, Lowell Fertilizer Company. *P. O. Box 105, Lowell, Mass.*

Woodruff Mason, Stamford, Conn. *Balenville, N. Y.*

Roscoe Hart Shaw, Milton. Assistant Chemist, Kansas Agricultural Experiment Station. *Manhattan, Kansas.*

Charles William Vickery, Dover. With Claflin Brothers, Mining Engineers. *Nome City, Alaska.*

Delbert Amos Wheeler, South Ashburnham, Mass. Teacher. *Boston, Mass.*

Everett Sidney Whittemore, Colebrook. Superintendent Stone-
hurst Farm. *Stonehurst Farm, Intervale.*

17—*1

1898.

*Richard Cole Butterfield, Westmoreland.

Helen Buzzell, Lee. Teacher, Lee, N. H.

R. F. D. 5, Dover.

Bernice Elisabeth Caverno (Mrs. E. H. Hancock), Durham.

Durham.

Burton Albert Corbett, Colebrook. Farmer. *Colebrook.*

Alfred Caverly Durgin, Lee. Farmer and Fruit Grower. *Lee.*

James Alfred Foord, Walpole. Professor of Agriculture, Dela-
ware College. *Newark, Delaware.*

John William Fullerton, Somersworth. Paymaster with Great
Falls Woolen Company. *Somersworth.*

Arthur Given, Durham. Assistant Chemist, U. S. Department
of Agriculture, Bureau of Chemistry.

1937 13th Street, N. W., Washington, D. C.

Edward Henry Hancock, Belmont. Instructor in Mechanism
and Woodwork, New Hampshire College. *Durham.*

Mabel Lucy Hayes, Durham. In charge of Commercial Dept.
in High School. *Box 696, Windsor Locks, Conn.*

Tomokichi Hirokawa, B. S. (Massachusetts Institute of Tech-
nology), Iamabari, Japan. Electrical Engineer Kyoto Elec-
tric Light Company. *Kyoto, Japan.*

Harry Clinton Mathes, Newmarket. Mail Clerk.

25 Belknap Street, Dover.

Herbert Fisher Moore, M. E. (Cornell, 1899), M. M. E. (Cornell,
1903), Penacook. Instructor in Testing Laboratory, Col-
lege of Engineering, University of Wisconsin.

919 University Avenue, Madison, Wis.

Gerry Austin Morgan, Goffstown. Draftsman with Taft-Pierce
Manufacturing Company.

93 Blackstone Street, Woonsocket, R. I.

Harry Putnam Richardson, Milford. With the John Hancock
Insurance Company.

346 East Thirty-second Street, Paterson, N. J.

Fred Dexter Sanborn, Ashland. Paper Box Manufacturer.
Publisher of Weekly Newspaper and Mgr. Job Printing Plant.

Ashland.

Fred Webster Smith, Franklin Falls. Foreman, Full Fash-
ion Department, Sulloway Hosiery Mill.

121 Glenwood Avenue, Franklin Falls.

Benjamin D. Tolles, Somersworth. With Great Falls Manufacturing Company, Department of Carding.

52 Grove Street, Somersworth.

18—*1

1899.

Henry Clark Baker, South Yarmouth, Mass. Representative Crocker-Wheeler Company.

425 Empire Building, Atlanta, Ga.

†Harry Everett Barnard, Nashua. Chemist, State Board of Health, State Laboratory of Hygiene. *Concord.*

Harrison Edward Clement, Nashua. Member American Institute Mining Engineers, Mining Engineer, Mechanical and Constructing Engineer, Bingham Consolidated Mining and Smelting Company, Bingham Copper and Gold Mining Company. *700 McCornick Building, Salt Lake City, Utah.*

Irving Atwell Colby, Exeter. Instructor in Machine Design, Sibley College, Cornell University.

119 Stewart Avenue, Ithaca, N. Y.

Willis Daniel Farley Hayden, Hollis. Superintendent Middlebrook Farm. *Dover.*

Frederic Libbey Horton, Dover. Engineering Department General Electric Company.

35 Lovers' Leap Avenue, Lynn, Mass.

William Elmer Hunt, Nashua. First Lieutenant Eighth United States Infantry. *Fort Niagara, New York, N. Y.*

Louis Hobart Kenney, Pownal, Me. Inspecting Draftsman U. S. N., Office of Inspector of Machinery for U. S. Navy, The William Cramp & Sons' Ship and Engine Building Works. *Philadelphia, Pa.*

Grace Agnes Mark (Mrs. Herbert F. Moore), Gilsum.

919 University Avenue, Madison, Wis.

Arthur Zebulon Norcross, Rindge. Farmer.

Pomfret Centre, Conn.

Harry Nelson Putney, Franklin. Machinist B. & M. R. R. Shops. *Concord.*

Etta Lillian Simpson, Durham. Principal Grammar School. *Acushnet, Mass.*

12—

1900.

Herbert Prescott Andrews, Hollis. Engineer, Century Electric Co. *1007-9-11 Locust St., St. Louis, Mo.*

David Burns Bartlett, Manchester. Law Student, Boston University Law School. *325 Kennard Building, Manchester.*

† Alumni trustee.

- Frances Burnham, Durham. Teacher Lincoln School.
554 Main Street, Wakefield, Mass.
- Blanche Mary Foye, Durham. Teacher in Concord High School.
Concord, Mass.
- Charles Elliott Page Mathes. With Wetherbee Allis Company,
 Clothiers. *456 Central Avenue, Dover.*
- Edward Emil Nelson, Nashua. Mining Engineer, Member of
 American Institute of Mining Engineers.
530-3 East Street, Salt Lake City, Utah.
- Alvena Pettee, Durham. Bachelor's Diploma in Domestic Sci-
 ence, Teachers' College, Columbia University, 1903, Professor
 of Home Economics, Clarkson Memorial Institute of Tech-
 nology. *16 Elm Street, Potsdam, N. Y.*
- Marie Livingstone Robertson (Mrs. Benjamin M. Duggar),
 Buffalo, N. Y. *809 Virginia Avenue, Columbia, Mo.*
- Walter Noah Shipley, Nashua. Testing Department, General
 Electric Company. *138 Lakeview Avenue, Lynn, Mass.*
- Charles Edwin Stillings, Somersworth. With Interborough
 Rapid Transit Co., New York City.
Sub-Station No. 12, 108 E. 19th St., New York City.
- John Ernest Wilson, Hollis. With C. O. D. Electric Works,
 638 San Julian Street, Los Angeles, Cal.
Los Angeles, Cal.
- Robert Morrill Wright, Hill. Principal Grammar School.
Hill, N. H.

12—

1901.

- Henry Harold Calderwood, Nashua. With General Electric
 Co. *403 Summer St., Lynn, Mass.*
- Charles Henry Courser, Warner. Engineer, with Rockingham
 County Light & Power Co.
7 Columbia St., Portsmouth, N. H.
- Alice Emerson Dorr, Dover. *35 Summer Street, Dover, N. H.*
- Harry Willis Evans, Portsmouth. Engineering Department,
 General Electric Company.
671 Western Avenue, Lynn, Mass.
- Harry Gilbert Farwell, Keene. Engineering Department, Gen-
 eral Electric Company. *403 Summer St., Lynn, Mass.*
- Ella Gertrude Gowen, Dover. Giving Lessons in Cookery.
15 Lexington Street, Dover.
- Charles Alvim Hunt, Nashua. Second Lieutenant and Battalion
 Q. M. and Commissary, Twelfth United States Infantry.
Camp Jossmann, Guimaras, P. I.

Edwin Price Jewett, Lakeport. In charge Prescription Department Walker Gordon Laboratory Co.

2112 Michigan Avenue, Chicago, Ill.

Robert McArdle Keown, Pomona, Fla. Instructor in Mechanical Drawing and Machine Design, University of Pennsylvania. *University of Pennsylvania, Philadelphia, Pa.*

Elmer Eugene Lyon, Wentworth. Teacher History and Civil Government, Dixon Academy. *Covington, La.*

George J. Penneo, Hampstead. Farmer. *Hampstead.*

Harold Morrison Runlett, Durham. Wholesale Shoe Business. With Clark Hutchinson Co., 121 Duane Street, New York City. *Durham.*

Edson Albert Straw. Foreman of Box Factory. *Ashland.*

13—

1902.

Mary Doe, Rollinsford. *Rural Route No. 2, Dover.*

Rural Route No. 2, Dover.

Edwin W. Gilmartin, Nashua. Engineering Department, General Electric Company. *132 So. Common St., Lynn, Mass.*

John C. Kendall, Peterborough. Instructor in Dairying, North Carolina College of Agriculture and Mechanic Arts.

West Raleigh, N. C.

Harry M. Lee, Moultonborough. Foreman Three Rivers Farm. *Dover.*

Abiel A. Livermore, Wilton. Rose Grower.

153 Greenwood St., Auburn, R. I.

George E. Merrill, B. Ag. (Cornell University, 1903), Newburyport, Mass. Farmer, Indian Rock Farm.

Hampton Falls.

Charles A. Payne, Portsmouth. Engineering Department, General Electric Company. *50 Mall Street, West Lynn, Mass.*

Eugene P. Runlett, Durham. With Williams & Clark, Shoe Manufacturers, Lynn, Mass.

Arthur L. Sullivan, Suncook. Assistant Chemist, Internal Revenue. *Treasury Department, Washington, D. C.*

9—

1903.

Harry David Batchelor, West Upton, Mass. Assistant Chemist, Experiment Station, New Hampshire College, Durham, N. H.

Edgar Forest Bickford, Rochester. Westinghouse Electric & Manufacturing Company. *P. O. Box 496, East Pittsburg, Pa.*

Frank Ray Brown, Durham. Machinist with Draper Manufacturing Company.

21 Union Street, Bancroft Parkway, Hopedale, Mass.

Everett William Burbeck, Haverhill. Mining Engineer with Oliver Iron Mining Company.

P. O. Box 370, or Spruce Office, Eveleth, Minn.

†Everett Garfield Davis, Newmarket.

Albert Noah Otis, Durham. Testing Department, General Electric Company, Schenectady, N. Y.

31 Eagle St., Schenectady, N. Y.

Ralph Harvey Rollins, East Concord. Engineer, Irrigation Construction. *Hazen, Nev.*

Morris Archer Stewart, Dover. Research Assistant, Massachusetts Institute of Technology, Boston, Mass.

9 Alston Street, Somerville, Mass.

David Albert Watson, Durham. Assistant in Highland Conservatories.

175 Stevens St. or 19 Robbins St., Lowell, Mass.

Melvin Johnson White, Farmington. Principal High School.

17 Main Street, Upton, Mass.

10—

1904.

Leander Ashton, Pittsfield. Gardner, Hardtcourt, North Andover, Mass.

†Walter Allen Barker, Pittsfield.

Edgar Charles Bickford, Durham. Boston Elevated Power Station, Boston, Mass.

Percy Anderson Campbell, Litchfield. Herdsman, Brooklawn Farms. *Morris Plains, New Jersey.*

Carrol Winfred Farr, North Weare. Dairy Farmer.

North Weare, N. H.

Joseph Ezra Goodrich, New Durham. Instructor in Science and Agriculture at Nichols Academy, Dudley, Mass.

†George Herbert Hill, La Crosse, Wis.

Thomas Jefferson Laton, Nashua. Testing Department, General Electric Company. *132 So. Common Street, Lynn, Mass.*

Raymond Louis Lunt, Dover. Surveyor.

Box 14, Dover, N. H.

Arthur Ronello Merrill, North Bridgton, Me. Instructor in Animal Husbandry and Dairying, Baron de Hirsch Agricultural and Industrial School, Woodbine, New Jersey.

Samuel Ambrose Richardson, Charlestown. Surveyor.

Box 235 Charlestown, N. H.

TWO YEARS' COURSE IN AGRICULTURE.

- †Lyman Charles Stratton, Hollis. (1897.) Superintendent Dairy Farm.
- Charles Wesley Martin, Durham. (1898.) Hotel Clerk, Raymond Hotel, Pasadena, California.
- George Henry Wheeler, Temple. (1898.) Farmer. *Temple.*
- Fred Joseph Durell, Newmarket. (1900.) Farmer. *Newmarket.*
- Harry Alvin Elliott, Lyme. (1900.) Farmer. *Lyme.*
- Edward Augustus Hills, Hollis. (1900.) Farmer. *Hollis.*
- Albert Cate Knowles, Epsom. (1900.) Farmer and Seed Agent. With Dunlap & Sons, Nashua, N. H. *Epsom.*
- †Robert Hale Pearson, Webster. (1900.)
- Charles Nicklin Blodgett, Hebron. (1901.) Manager Breezy Point Farm, Breezy Point. *Warren.*
- Harry Douglass Verder, Hollis. (1901.) Stock Raiser. *Hollis.*
- †Rufus Leonard Cushman, North Adams, Mass. (1901.)
- †George R. Brew, Lowell, Mass. (1902.)
- Carroll W. Farr, North Weare. (1902.) B. S. New Hampshire College, 1904.
- George F. Hills, Hollis. (1902.) With H. S. Miller, Florist, West Fairview, Cumberland Co., Pa.
- †Walter E. Quimby, Deerfield. (1902.)
- Walter P. Tenney, Chester. (1902.) Fruit Farmer. *Chester.*
- †Thornton N. Weeks, Greenfield. (1902.)
- Robert E. Whittier, Deerfield. (1902.) Supt. Maplewood Farm, Danvers, Mass.
- Edward C. Wilson, Wilton. (1902.) Live Stock Commission, Union Stock Yards, care of Wood Bros. *406 W. 60 Place, Chicago, Ill.*
- †Harry Garfield Brierley. (1903.) Dover.
- †George Grover Manning. (1903.) Boston, Mass.
- †James Henry Nixon. (1903.) East Brentwood.
- †Roscoe Franklin Swain. (1903.) South Hampton.
- Erland Graves Batchelder. (1904.) Wilton. Dairying and Gardening, Kimball Heights Farm. *R. F. D. No. 3, Wilton, N. H.*
- ‡Wesley Pillsbury Flint. (1904.) Newburyport, Mass.
- Henry Marston Shurbert. (1904.) Northwood Ridge.

† Special student New Hampshire College.

SUMMARY.

Graduates, Bachelors of Science, 1871-1904	259
Graduates, Two Years' Course	26
Agriculturists	53
Architects	1
Business Pursuits	54
Chemists	6
Clergyman	1
Civil, Mechanical, Electrical, and Mining Engineers	32
Draftsmen	5
Lawyers	5
Manufactures and Mechanics	17
Mining	6
Physicians	13
Teachers	30
Unknown	23
United States Army	2
United States Weather Bureau	6
Dead	17

ALPHABETICAL LIST OF GRADUATES.

-
- Adams, E. E., 1878.
 Adams, G. E., 1885.
 Adams, F. S., 1895.
 Adair, R. K., 1877.
 Alden, R. S., 1885.
 Aldrich, H. C., 1876.
 Aldrich, W. H., 1875.
 Aldrich, T. E., 1881.
 Andrews, H. P., 1900.
 Angier, W. E., 1885.
 Arnold, E. F., 1883.
 Ashton, L., 1904.
 Bailey, C. H., 1879.
 Bailey, E. A., 1885.
 Baker, H. C., 1899.
 Ballard, W. P., 1871.
 Barker, P. L., 1892.
 Barker, W. A., 1904.
 Barnard, H. E., 1899.
 Barnard, H. L., 1881.
 Barney, H. W., 1897.
 Bartlett, Miss C. A., 1897.
 Bartlett, D. B., 1900.
 Bartlett, E., 1872.
 Bartlett, Miss M. B., 1897.
 Batchelder, E. G. (2 year), 1904.
 Batchelor, H. D., 1903.
 Bickford, E. C., 1904.
 Bickford, E. F., 1903.
 Bickford, P. G., 1885.
 Bigelow, F. L., 1883.
 Birtwhistle, F. S., 1883.
 Blodgett, C. N. (2 year), 1901.
 *Boardman, G. J., 1881.
 Boutwell, H. L., 1882.
 Brew, G. R. (2 year), 1902.
 Brierley, H. G. (2 year), 1903.
 Brigham, E. L., 1876.
 Brill, A. W., 1885.
 Bristol, E. F., 1881.
 Bristol, N. D., 1883.
 Britton, F. C., 1895.
 Britton, W. E., 1893.
 *Brooks, H., 1877.
 Brooks, P. C., 1885.
 Brown, B. S., 1894.
 Brown, F. R., 1903.
 Bryant, F. J., 1893.
 Buck, W. F., 1897.
 Bugbee, D. J., 1882.
 Burbeck, E. W., 1903.
 Burleigh, A. T., 1881.
 Burleigh, R. F., 1882.
 Burnham, Miss F., 1900.
 Butterfield, J. W., 1876.
 *Butterfield, R. C., 1898.
 Buzzell, Miss H., 1898.
 Calderwood, H. H., 1901.
 Campbell, P. A., 1904.
 Carpenter, L. J., 1882.
 *Carr, M. B., 1888.
 Carson, J. W., 1877.
 Caverno, Miss B. E., 1898.
 Chamberlin, A. F., 1876.
 Chapin, R. C., 1879.
 *Chubert, C. O., 1877.
 Clement, H. E., 1899.
 Colby, F. H., 1889.
 Colby, I. A., 1899.
 Colburn, A. W., 1897.
 Cole, E. G., 1891.
 Comings, Miss C. L., 1897.
 Comings, F. P., 1883.
 *Comings, Miss M. E., 1897.
 Corbett, B. A., 1898.
 Courser, C. H., 1900.

* Dead.

- Cragin, L. M., 1879.
 Cross, A. B., 1876.
 *Cummings, E. S., 1884.
 Currier, W. S., 1887.
 Curtis, F. P., 1875.
 Davis, E. G., 1903.
 Davis, F. A., 1886.
 Davis, F. C., 1884.
 Davis, H. G., 1888.
 Dennett, I. L., 1897.
 Dewey, E. P., 1882.
 Doe, Miss Mary, 1902.
 Dorr, Miss A. E., 1901.
 Durell, F. J. (2 year), 1900.
 Durgin, A. C., 1898.
 *Edwards, C. A., 1877.
 Eldredge, F. E., 1873.
 Elliott, H. A. (2 year), 1900.
 Ely, F. D., 1881.
 Emerson, F. J., 1885.
 Emerson, F. V., 1875.
 Emery, S. E., 1881.
 Evans, H. W., 1901.
 Everett, R. M., 1891.
 Farr, C. W. 1904 (2 year),
 1902.
 Farwell, H. G., 1901.
 *Flint, W. F., 1877.
 Flint, W. P. (2 year), 1904.
 Follansbee, F. H., 1883.
 Foord, J. A., 1898.
 Forristall, E. H., 1897.
 Foster, S. M., 1884.
 Foye, Miss B. M., 1900.
 French, A. C., 1883.
 Fuller, F. D., 1892.
 Fullerton, J. W., 1898.
 Gay, J. E., 1883.
 Gerrish, E. C., 1888.
 Gillis, L. C., 1889.
 Gilmartin, E. W., 1902.
 Given, A., 1898.
 Goodrich, J. E., 1904.
 Gowen, Miss E. G., 1901.
 Gunn, F. W., 1894.
 Hall, C. C., 1877.
 Hancock, E. H., 1898.
 Hardy, A. W., 1887.
 Hardy, C. W., 1875.
 Hardy, M. F., 1874.
 Harvey, J. E., 1886.
 Hayden, W. D. F., 1899.
 Hayes, L. D., 1897.
 Hayes, Miss M. L., 1898.
 Hazen, A., 1885.
 Hazen, C. H., 1881.
 Hazen, W. N., 1888.
 Henry, J. G., 1877.
 Hewitt, C. E., 1893.
 Hill, G. H., 1904.
 Hill, H. E., 1894.
 Hills, E. A. (2 year), 1900.
 Hills, G. F. (2 year), 1902.
 Hirakawa, T., 1898.
 *Hollister, C. P., 1877.
 Holman, G. M., 1877.
 *Holmes, N. C., 1879.
 Hood, C. H., 1880.
 Horton, F. L., 1899.
 Hough, A. B., 1892.
 Howe, F. W., 1894.
 Hubbard, C. A., 1877.
 Hubbard, C. L., 1893.
 Hunt, C. A., 1901.
 Hunt, J. N., 1897.
 Hunt, W. E., 1899.
 *Hutchinson, L. J., 1889.
 James, O. M., 1893.
 Jenkins, E. D., 1897.
 Jewell, H., 1875.
 Jewett, J. Y., 1890.
 Jewett, E. P., 1901.
 Kelley, E. D., 1883.
 Kendall, J. C., 1902.
 Kenney, L. H., 1899.
 Keown, R. McA., 1901.
 Kimball, H. H., 1884.
 Kimball, W. W., 1876.
 *Kilburn, E., 1878.
 Kittredge, L. H., 1896.

* Dead.

- Knowles, A. C. (2 year), 1900.
 Laton, T. J., 1904.
 *Leavitt, C. O., 1875.
 Lee, H. M., 1902.
 Livermore, A. A., 1902.
 Loveland, G. A., 1882.
 Lunt, R. L., 1904.
 Lyon, E. E., 1901.
 Mann, M. B., 1884.
 Manning, G. G. (2 year), 1903.
 Mark, Miss G. A., 1899.
 *McGregor, J. L., 1875.
 Marston, F. P., 1881.
 Mason, J. W., 1882.
 Mason, W., 1897.
 Martin, C. W. (2 year), 1898.
 Mathes, C. E. P., 1900.
 Mathes, H. C., 1898.
 Megrath, W. A., 1881.
 Merrill, A. R., 1904.
 Merrill, G. E., 1902.
 Moore, G. M., 1884.
 Moore, H. F., 1898.
 Morgan, A. B., 1883.
 Morgan, G. A., 1898.
 Mullins, G. M., 1885.
 Nelson, E. E., 1900.
 Nichols, H. A., 1882.
 Nixon, J. H. (2 year), 1903.
 Norcross, A. Z., 1899.
 Norris, J. L., 1889.
 Norris, Z. A., 1884.
 O'Gara, E. D., 1888.
 Parker, D. D., 1876.
 Parker, F. C., 1879.
 Payne, C. A., 1902.
 Pearson, R. H. (2 year), 1900.
 Peck, E., 1875.
 Penneo, G. J., 1901.
 Perkins, L., 1871.
 Pettee, Miss A., 1900.
 Porter, G. E., 1888.
 Preston, J. F., 1890.
 Putney, H. N., 1899.
 Quinby, W. E. (2 year), 1902.
 Ramsey, I. W., 1875.
 Record, C. E., 1878.
 Richardson, H. P., 1898.
 Richardson, S. A., 1904.
 Robertson, Miss M. L., 1900.
 Rollins, R. H., 1903.
 Ruevsky, B. S., 1886.
 Runlett, E. P., 1902.
 Runlett, H. M., 1901.
 Sanborn, E. Q., 1890.
 Sanborn, F. D., 1898.
 Sanborn, G. A., 1887.
 Sanders, C. H., 1871.
 Sargent, G. J., 1888.
 *Sawyer, H. A., 1874.
 Savage, H. N., 1887.
 Scott, C. W. E., 1889.
 Seward, O. L., 1875.
 Shaw, R. H., 1897.
 Shipley, W. N., 1900.
 Shurbert, H. M. (2 year), 1904.
 Simpson, Miss E. L., 1899.
 Slack, C. I., 1890.
 Smith, A. W., 1893.
 Smith, F. W., 1898.
 Smith, J. F., 1873.
 Smith, J. W., 1888.
 Stanton, F. T., 1881.
 Stewart, M. A., 1903.
 Stickney, V. H., 1881.
 Stillings, C. E., 1900.
 Stone, D. E., 1889.
 Stone, E. M., 1892.
 Stone, E. P., 1891.
 Stratton, L. C. (2 year), 1897.
 Straw, A. E., 1901.
 Sullivan, A. L., 1902.
 Swain, R. F. (2 year), 1903.
 Tenney, W. P. (2 year), 1902.
 Thompson, E. C., 1884.
 *Thompson, F. E., 1882.
 Thurber, M. F., 1886.
 Tolles, B. D., 1898.

* Dead.

- | | |
|--------------------------------|---------------------------------|
| Trow, C. A., 1895. | White, M. J., 1903. |
| Tucker, C. H., 1873. | Whitcher, G. H., 1881. |
| Verder, H. D. (2 year), 1901. | Whittemore, E., 1877. |
| Vickery, C. W., 1897. | Whittemore, E. S., 1897. |
| Waldron, B. L., 1887. | Whittier, R. E. (2 year), 1902. |
| Walker, G. E., 1888. | Whittier, W. L., 1883. |
| Wallace, S. A., 1881. | Wilkins, G. H., 1879. |
| Washburn, F., 1889. | Willard, E. M., 1875. |
| Wason, E. H., 1886. | Wilson, E. C. (2 year), 1902. |
| Watson, D. G., 1903. | Wilson, J. E., 1900. |
| Weeks, T. N. (2 year), 1902. | Wood, A. H., 1885. |
| Wheeler, C. A., 1877. | Wood, G. P., 1886. |
| Wheeler, D. A., 1897. | Woodward, C. M., 1883. |
| Wheeler, G. H. (2 year), 1898. | Wright, R. M., 1900. |
| White, F. A., 1872. | |

SPECIMEN ENTRANCE EXAMINATION PAPERS FOR FOUR-YEAR COURSES.

ALGEBRA.

1. Define algebra, quantity, coefficient, exponent. Explain positive and negative quantities. Give the signification of fractional and negative exponents. Illustrate.

2. Add $\frac{2}{3}ax^{\frac{1}{2}} - \frac{1}{2}a\sqrt{x}$ and $3bx^2 - \frac{2}{3}ax^{\frac{1}{2}} + 4b$.

3. Multiply:

$$(-4ab), (3\sqrt{ab}), (-2\sqrt{-ab}), (3\sqrt{-ab}), (-a\sqrt{b}), (\sqrt{ab}).$$

4. Find the prime factors of $x^6 + y^6$, x^{-1} , $-y^{-6}$, $x^{2m} + x^m - 2$.

5. Reduce $\frac{1}{a^{\frac{1}{3}}b^{\frac{1}{4}}c^{\frac{2}{7}}}$, $\frac{1}{\sqrt{a+\sqrt{b}}}$, $\frac{1}{a^{\frac{1}{2}}+b^{\frac{1}{5}}}$ to equivalent fractions having rational denominators.

6. Solve for x and y $\frac{2}{ax} + \frac{3}{by} = 5$ and $\frac{5}{ax} - \frac{3}{by} = 2$.

7. $(x-y)^5$, $(\frac{2}{5}x^{\frac{1}{3}}y^{\frac{1}{2}})^{\frac{1}{3}}$, $(x-2a+3a^2)^2$. Perform operations indicated.

8. $3ax^2 - 2x + 3b = 0$. Solve for x .

9. Insert two arithmetical means between c and d .

10. A crew can row a miles in b hours down stream, and c miles in d hours against the stream. Find the rate in miles per hour of the current, and of the crew in still water.

ARITHMETIC.

1. Define arithmetic, fraction, per cent., interest, proportion, decimal.

2. From $3\frac{5}{7}$ take $1\frac{1}{3} + 1\frac{3}{7}$.

3. $3.014 + 27.900 \div .047$.

4. $\frac{\frac{6}{7}}{\frac{5}{8}} \times \frac{4}{3} \div \frac{6}{11}$.

5. Two men engage in business. One puts in \$1,000 for 12 months; the other \$2,000 for 15 months. They gain \$500. How shall it be divided between them?

6. Find the simple, annual, and compound interest on \$1,200 for 3 years, 2 months, and 7 days, at 6 per cent.

7. If 2 men in 3 days can cut 10 acres of grass, in how many days can 3 men cut 8 acres under same conditions?

8. Find square root of 31407.296.

9. Define meter, gram, litre, stere.

10. A box is 2 meters long, 1.5 meters wide, and 5 decimeters high. What is its capacity in litres?

BOTANY.

1. What are the three principal parts of a plant, and what does each do for the plant?

2. What is the embryo? Of what parts does it consist? Where does the root originate? What part of the root takes food material from the soil?

3. What are the principal steps or periods in the life history of a plant?

4. Define node, internode, petiole, peduncle, stipule, bract, axil of leaf, compound leaf.

5. Draw diagrams of the following leaves: (*a*) entire ovate; (*b*) lanceolate serrate; (*c*) lobed; (*d*) palmately cleft; (*e*) pinnately parted.

6. Draw diagrams of the following forms of inflorescence: raceme, spike, head, umbel, cyme.

7. Name five of the earliest blooming plants of New Hampshire and five which have their flowers in catkins.

8. To what families do the following plants belong: cucumber, peach, lettuce, cabbage, potato, corn, onions, celery, clover, strawberry?

9. How would you distinguish between an elm and an oak, a pine and a hemlock, an ash and a hickory?

10. What is the difference between a fruit and a seed?

ENGLISH.

The composition must be correct in spelling, grammar, and punctuation.

I.

Select any *four* of the following topics, and write a short composition on each :

1. The Speech of Nestor.
2. Priam in the Tent of Achilles.
3. The Story of the Caskets.
4. Sir Roger at Church.
5. Characteristics of Dr. Primrose.
6. The Return of the Knight.
7. The Robbery of Silas Marner.

II.

Omit *one*.

1. Macbeth and Lady Macbeth compared.
2. The supernatural in "Comus."
3. From the standpoint of Macaulay, compare Milton and Addison.

This part of the examination presupposes the thorough study of each of the works named in this division. In addition the candidate may be required to answer questions involving the essentials of English grammar and composition. Inability to answer such questions will be considered a sufficient ground for refusing admission.

FRENCH.

1. (a) Synopsis: First person singular, *vouloir*; third singular, *aller*; third plural, *finir*. (b) Principal parts, *faire, venir, mettre, voir, prendre*.

2. Translate: (1) Have you given him any money? (2) This book is better than mine. (3) They lost their mother a week ago. (4) I have no sugar. (5) Give me

this pen, if you please. (6) I shall see him to-morrow, and he will give it to me. (7) I fear that you will lose the money which I have given to you. (8) She has gone to Boston to-day, but she will be in Durham to-morrow. (9) The woman whom we have seen in the garden is very young. (10) He arrived in America June 4, 1899. (Write out the date.)

3. Translation at sight.

4. Translate: (a) Il parlait encore quand il vit la flamme du fusil d'Orlanduccio, et presque en même temps un second coup partit à sa gauche, de l'autre côté du sentier, tiré par un homme qu'il n'avait point aperçu et qu'il ajustait posté derrière un autre mur. Les deux balles l'atteignirent: l'une, celle d'Orlanduccio, lui traversa le bras gauche, qu'il lui présentait en le couchant en joue; l'autre le frappa à la poitrine, déchira son habit, mais, rencontrant heureusement la lame de son stylet, s'aplatit dessus et ne lui fit qu'une contusion légère. Le bras gauche d'Orsa tomba immobile le long de sa cuisse, et le canon de son fusil s'abaissa un instant; mais il le releva aussitôt, et, dirigeant son arme de sa seule main droite, il fit feu sur Orlanduccio. La tête de son ennemi, qu'il ne découvrait que jusqu'aux yeux, disparut derrière le mur. La fumée sortie de son arme montait lentement vers le ciel; aucun mouvement derrière le mur, pas le plus léger bruit. Sans la douleur qu'il ressentait au bras, il aurait pu croire que ces hommes sur qui il venait de tirer étaient des fantômes de son imagination. [Mérimée, Colomba.]

(b) Cela vient des nouveaux maîtres de Longueval, deux Américaines . . . Madame Scott et Miss Percival. Retenez bien leurs noms et priez pour elles ce soir.

Puis il se sauvait, sans attendre les remerciements; à travers les champs, à travers les bois, de hammeau en hammeau, de chaumière, il allait, il allait, il allait . . . Une sorte de griserie lui montait au cerveau. Partout sur son passage, c'étaient des cris de joie et d'étonnement. Tous ces louis d'or tombaient, comme par miracle, dans ces

pauvres mains habituées à recevoir de petites pièces de monnaie blanche. Le curé fit même des folies, des vraies folies; il était lancé, il ne se connaissait plus. Il donnait à ceux-là mêmes qui ne demandaient pas. [Halévy, L'Abbé Constantin.]

GERMAN.

1. (a) Principal parts of brechen, gehen, halten, lesen, schlagen. (b) Synopsis third person singular, singen.

2. Translate: (1) The boy's father is a count, and his mother is a princess. (2) Good, industrious children are the joy of their parents. (3) Does his sister give him the book? (4) The letter which you gave me is on the table. (5) Yesterday was the fourth of September, 1901. (6) The sun has set and the moon is rising. (7) Have you already forgotten what you promised? (8) If you had come, you would have heard good music. (9) I am obliged to go to Berlin, but I should like to go to Paris. (10) She told us that her husband was dead, and that she had no money.

3. Translate: (a) Wie er hinunter in das Hotel kam, hörte er die heftige Stimme eines der Kellner oder des Wirts und eine bittende Frauenstimme dazwischen; und als er neugierig geworden, hinzutrat, um wenigstens zu sehen, was es dort gebe, bemerkte er eine junge, sehr einfach, aber sauber gekleidete Dame, deren Gesicht ihm merkwürdiger Weise bekannt vorkam, die sich schuchtern und mit groszen Thränen in den Augen gegen den ihr unver schämt gegenüberstehenden Oberkellner verteidigte.—[*Gerstaecker Irrfahrten.*]

(b) Zwei lange Jahre waren vergangen, die ersten Reformationskämpfe, viel schwere Tage waren an Breisach vorübergezogen, Hans hatte sich durch nichts beirren lassen, unverdrossen hatte er weiter gearbeitet, ohne nach rechts oder nach links zu schauen, und endlich im Sommer des Jahres 1526 erschien er auf dem Rathaus und erklärte das Werk als vollendet.—[*Hüllern, Hoehel, als die Kirche.*]

(c) Elisabeth setzte sich unter eine überhängende Buche und lauschte aufmerksam nach allen Seiten; Reinhardt sass einige Schritte davon auf einem Baumstumpf und sah schweigend nach ihr hinüber. Die Sonne stand gerade über ihnen; es war glühende Mittagshitze; kleine goldglänzende, stahlblaue Fliegen standen flügelschwingend in der Luft; rings um sie her ein feines Schwirren und Summen, und manchmal hörte man tief im Walde das Hämmern der Spechte und das Kreischen der andern Waldvögel.—[*Storm, Immensee.*]

GRECIAN HISTORY.

1. Give an account of the voyage of the Argonauts.
2. Draw a map showing Asia Minor, Macedonia, and the principal Grecian cities.
3. Locate, and with a sentence for each describe the following: Bosphorus, Arcadia, Cyprus, Olympia, Syracuse, Thebes, Lesbos, Propontis, Salamis, Babylon.
4. Sketch the lives of the following: Pythagoras, Pisistratus, Tyrtaeus, Lycurgus.
5. Give a brief account of the Peloponnesian War.
6. Give a brief account of the Expedition of the Ten Thousand.
7. Give an account of the life and work of Heredotus.
8. Explain the principles of the Stoics and of the Epicureans.

PHYSICAL GEOGRAPHY.

1. Is it now seed-time, or harvest-time, in the Transvaal?
2. Is it now day, or night, in Manila.
3. Describe the climate of Havana, Pekin, and Cape Nome.
4. State the causes of the variations in season, climate, day, and night.

5. Describe the trade winds.
6. What ocean currents produce the fogs on the Grand Banks? Why?
7. What causes the high tides in the Bay of Fundy?
8. Describe the principal physical divisions of the United States.
9. Describe the largest river-system in the world.
10. Show the relationship between New Hampshire's physical features and the occupations of its people.

PHYSICS.

1. What is motion? Show how motion is purely relative. A pendulum at the highest point of its path is at rest; what has become of the energy it possessed when moving? Show by illustration that energy when transformed is not all available. In what two ways may we recognize a force? The mass of a given train is one million pounds; how much work must the engine do simply to get the train up to a speed of thirty miles an hour, regardless of resistance? A uniform straight lever, ten feet long, balances at a point three feet from one end; when twelve pounds are hung from this end, and an unknown weight from the other, find the unknown weight, if the lever itself weighs eight pounds.

2. Outline the accepted theory of heat. What is meant by the temperature of a body? Explain what occurs when a pond freezes over, and show how fish-life is preserved by this provision of nature. Explain conduction, convection, and radiation of heat.

3. What relation is there between heat and light? What obvious distinction? How is the path of light revealed in a dark room? How much deeper is water immediately under a bather than it appears to be? Describe the appearance of water to one looking outward from the shore. Explain the decomposition of white light by a prism.

4. In what does sound have its origin? Explain the

nature of the transmission of sound. Why can sounds often be heard farther at night than by day? Explain what is meant by the harmonics of a vibrating string.

5. Describe the mariner's compass. Why does not a freely floating magnetic needle move bodily toward the north magnetic pole? Explain how water may be decomposed by an electric current. Why are not birds on a telegraph wire killed by the passage of a current?

PLANE GEOMETRY.

1. Define equal, equivalent, parallel, perpendicular, parallelogram, trapezoid, mean proportion, third proportional, limit of a variable quantity. Give theorem of limits.

2. Theorem: If two parallels are cut by a transversal the alternate interior angles are equal.

3. The sum of the angles of any polygon is equal to two right angles taken as many times, less two, as the polygon has sides.

4. If the non-parallel sides of a trapezoid are equal, its diagonals are also equal.

5. If the number of sides of an inscribed polygon is even, the sum of the alternate angles is equal to as many right angles as the polygon has sides, less two.

6. If any two chords be drawn through a fixed point within a circle, the product of the segments of one chord is equal to the product of the segments of the other.

7. If two of the medians of a triangle are equal, the triangle is isosceles.

8. The number of diagonals of a polygon of b sides is how many?

ROMAN HISTORY.

1. What do we actually know about the early history of Rome?

2. What were the early Roman laws of debtor and creditor?

3. Give the history of the first Punic War.
4. Give a brief but comprehensive account of each of the following: Cæsar, Cicero, Catiline, Jugurtha, Sulla, Pyrrhus, Cleopatra, Mithridates, Vespasian.
5. Give an account of the founding of Constantinople.
6. State fully the causes of the decline of the Roman Empire.
7. Give the facts which bear upon Roman agriculture.
8. Locate, and with a sentence for each describe the following: Pontus, Caucasus, Cyprus, Rhine, Rhone, Sicily, Adriatic, Armenia, Constantinople, Syracuse.

UNITED STATES HISTORY AND CONSTITUTION.

A.

Give full statement of collateral reading.

B.

1. Give an account of Coronado's expedition, stating the approximate time of it.
2. Give a brief account of Virginia during the Puritan supremacy in England; of Maryland; of Massachusetts.
3. What was done at the Albany congress of 1754? Who was the most important member? What plan was proposed? What objections were made? What results followed?
4. Give a brief account of each of the following, stating what great service he rendered to the United States: Thomas Paine, Samuel Adams, John Jay.
5. Explain the principal points about the Treaty of Ghent. What was done about the principal things that led to the war? Give the leading facts about the Hartford Convention.
6. Explain the principle involved and the importance of each of the following: Ordinance of 1787, Wilmot Proviso, Dred Scott Case.

7. Starting with 1789, explain when and how each addition has been made to the territory of the United States.

C.

1. State fully the provisions for amending the constitution of the United States.

2. State fully the provisions for electing the president of the United States.

3. State the qualifications, the term, and the election provisions for senators; for the members of the House of Representatives.

NEW HAMPSHIRE COLLEGE
AGRICULTURAL EXPERIMENT STATION.

Fifteenth Annual Report

NOVEMBER 1, 1902, TO OCTOBER 31, 1903.

AGRICULTURAL EXPERIMENT STATION.

BOARD OF CONTROL.

HON. JOHN G. TALLANT, *Chairman*, Pembroke.

HON. GEORGE A. WASON, New Boston.

CHARLES W. STONE, A. M., *Secretary*, East Andover.

HON. WARREN BROWN, Hampton Falls.

PRES. WILLIAM D. GIBBS, *ex-officio*, Durham.

STATION COUNCIL.

WILLIAM D. GIBBS, M. S., *Director*.

FRED W. MORSE, M. S., *Chemist and Vice-Director*.

CLARENCE M. WEED, D. Sc., *Entomologist*.

FRANK WILLIAM RANE, B. Ag., M. S., *Horticulturist*.

FREDERICK W. TAYLOR, B. S., *Agriculturist*.

EDWARD L. SHAW, B. S., *Associate Agriculturist*.

ASSISTANTS.

HAROLD H. SCUDDER, A. B., *Assistant Chemist*.

HARRY F. HALL, *Assistant in Horticulture*.

JOHN C. BRIDWELL, B. S., *Assistant Entomologist*.

EDITH M. DAVIS, *Purchasing Agent*.

MABEL E. TOWNSHEND, A. B., *Stenographer*.

FIFTEENTH ANNUAL REPORT.

ANNUAL STATEMENT.

Of the Hatch Fund of the New Hampshire College of Agriculture and the Mechanic Arts, for the year ending June 30, 1903.

RECEIPTS.

Cash received from United States treasurer . \$15,000.00

EXPENDITURES.

Cash paid for salaries	\$9,306.88
labor	1,379.52
publications	1,570.67
postage and stationery	105.81
freight and express	218.19
heat, light, and water	387.29
chemical supplies	97.81
seeds, plants, and sundry supplies	380.42
fertilizers	49.90
library	316.87
tools, implements, and machinery	25.14
furniture and fixtures	70.50
scientific apparatus	382.44
traveling expenses	558.72
contingent expenses	15.00
building and repairs	134.84
	<hr/>
	\$15,000.00

We, the undersigned, duly appointed auditors of the corporation, do hereby certify that we have examined the books and accounts of the New Hampshire Agricultural

Experiment Station for the fiscal year ended June 30, 1903; that we have found the same well kept and classified as above, and that the receipts for the year from the Treasurer of the United States are shown to have been \$15,000, and the corresponding disbursements, \$15,000; for all of which proper vouchers are on file and have been by us examined and found correct.

And we further certify that the expenditures have been solely for the purposes set forth in the act of congress approved March 2, 1887.

Signed,

ROSECRANS W. PILLSBURY,
G. BYRON CHANDLER,

Auditors.

Attest:

WALTER M. PARKER,
Custodian.

SUPPLEMENTARY STATEMENT.

RECEIPTS.

Cash received, analytical fees, etc.	.	.	\$1,209.97
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EXPENDITURES.

Cash paid for salaries and labor	.	.	.	\$899.58
postage, freight, and express	.	.	.	8.58
heat, light, and water,	.	.	.	193.77
apparatus and supplies	.	.	.	93.04
contingent expenses	.	.	.	15.00
				<hr/>
				\$1,209.97

REPORT OF THE VICE-DIRECTOR.

FRED W. MORSE.

The working year of the Agricultural Experiment Station has been fixed to include the time between November 1 and October 31, in order to comply with the statutes governing the annual reports of state institutions. The financial report covers the period from July 1 to June 30, to conform to the fiscal year of the national government, from which the Station receives its funds.

During ten months of the year just closed, viz., from November 1, 1902, to September 1, 1903, the Agricultural Experiment Station was in charge of the vice-director and chemist. During the spring and summer, he was also obliged to assume charge of the agricultural department, owing to the resignation in March of the agriculturist, Prof. Harry Hayward, who was appointed assistant chief of the dairy division, United States department of agriculture.

Eight bulletins in the regular series, one technical bulletin, and one nature leaflet, have been issued during the year, namely:

Number 97. Inspection of Fertilizers by Fred W. Morse.

Number 98. Inspection of Feeding-Stuffs by Fred W. Morse.

Number 99. A Selected List of Vegetables for the Garden by Frank Wm. Rane.

Number 100. The White Fly of Greenhouses by Clarence M. Weed and Alfred F. Conradi.

Number 101. Fungous Diseases by Herbert H. Lamson.

Number 102. Insect Record by Clarence M. Weed.

Number 103. Standard Milk by Fred W. Morse.

Number 104. Fifteenth Annual Report.

Technical Bulletin Number 6. Parasites of the American Tent Caterpillar by William F. Fiske.

Nature Study Leaflet Number 4. Wild Flowers of New Hampshire by Clarence M. Weed.

September 1, 1903, the vacancies in the administrative and agricultural departments were filled by the appointment of William D. Gibbs, M. S., as director, Frederick W. Taylor, B. S., as agriculturist, and Edward L. Shaw, B. S., as associate agriculturist in charge of animal husbandry. The department of botany was at this time consolidated with the department of entomology, Dr. H. H. Lamson having resigned to accept another position. Mr. J. C. Bridwell was appointed assistant entomologist in place of Mr. A. F. Conradi, who was called to the Texas station.

The progress of the Station departments will be found under the appropriate headings, as reported by the officers in charge.

DEPARTMENT OF CHEMISTRY.

FRED W. MORSE.

During the year the department has co-operated with the State Board of Agriculture in the inspections of feeding stuffs and fertilizers. Fifty-seven samples of commercial feeding-stuffs were analyzed in the early part of the year, and the results published in Bulletin No. 98.

During the summer ninety-three brands of fertilizers were analyzed and the data have been prepared and will be issued early in the new year.

The department has had more work for the public than usual. It has aided the farmers directly by numerous analyses of milk for milk producers whose product was not up to the legal standard, and a short bulletin has been issued to inform the public about the milk-standard and how to comply with it.

Thirty-four samples of cattle and poultry foods have been analyzed in addition to those examined for the Board of Agriculture, and the results are deemed of sufficient interest to be here tabulated. Six samples of cotton-seed

meal were received from farmers in the following towns, representing widely separated localities: Plymouth, Lebanon, West Chesterfield, Concord, and Campton. Protein only was determined in these samples, and it ranged from 38.9 per cent. to 45.4 per cent., averaging 42.3 per cent. As yet, we have found no evidence of inferior cotton-seed meal in the state.

The following cattle-foods were received from various sources.

Two of the brans, viz., Washburn Crosby Co.'s and Sheffield King Milling Co.'s, are a new class of this favorite cattle-food. They are very flaky in texture and free from flour. It will be noticed, however, that they are low in protein.

COMPOSITION OF CATTLE FOODS.

	Locality.	Protein.	Fat.
Gluten Feed, "Queen".....	Pittsfield.....	22.91	2.78
Gluten Feed, "Globe".....	College.....	26.87	3.58
Gluten Feed, "Buffalo".....	College.....	24.13	5.15
Gluten Feed.....	College.....	23.17	2.19
Wheat Bran.....	Bath.....	15.47	4.53
Wheat Bran, Pillsbury's.....	College.....	15.28	5.41
Wheat Bran, Washburn Crosby Co.'s.....	College.....	13.42	5.04
Wheat Bran, Stratton's.....	Bath.....	17.55	4.07
Wheat Bran, "Empire".....	Bath.....	17.55	6.30
Wheat Bran, Sheffield King Milling Co.'s.....	College.....	13.77	6.40
Oat Feed.....	Contoocook.	10.75	3.68
Oat Feed.....	Keene.....	6.96	3.00
Oat Feed, "Haskell's Stock Food".....	Rochester...	9.03	7.60

A large part of our feeding-stuffs were received from poultry growers and are therefore grouped as poultry foods.

COMPOSITION OF POULTRY FOODS.

	Locality.	Protein.	Fat.
Shredded Wheat.....	Milford	10.71	1.65
Biles's XXXX Distiller's Grains.....	Milford	36.33	7.90
Hominy Meal.....	Milford	12.11	3.30
"Red A" Oat Middlings.....	Milford	21.76	7.60
Keith's Animal Meal.....	Milford	51.16	2.80
Darling's Beef Scrap.....	Milford	59.49	13.15
Lord's Meat Scrap.....	Milford	51.69	17.80
Whitman & Pratt's Animal Meal.....	Milford	38.08	12.80
Animal Meal.....	Rindge.....	28.18	11.32
Darling's Animal Meal.....	Rumney	45.20	15.30
Bradley's Superior Meat Meal.....	Rumney	35.90	7.30
Bowker's Animal Meal.....	Rumney	35.10	8.70
Bowker's Meat Scrap.....	Littleton. ...	59.31	15.75
Meat Scrap.....	Littleton.....	46.12	15.25
Meat Scrap.. ..	Littleton.....	44.66	17.35
Romaine's Boiled Beef and Bone.....	Littleton.....	42.46	17.65
Bowker's Ground Beef Scrap.....	Littleton.....	46.94	13.80

A dead pigeon was received from Portsmouth together with a small sample of corn gathered from the surface of a field from which it was thought the bird might have picked up some kernels that had been poisoned.

The organs of the pigeon and the contents of its crop were separately tested for strychnine, and very decided reactions obtained, particularly from the crop contents. The corn from the field showed no poison. However, it was noticed that the corn in the crop was a yellow flint, while that from the field was a dent variety, apparently Leaming.

It is a not uncommon practice for farmers to expose corn soaked in strychnine solution, in order to stop the ravages of crows. It is a dangerous practice and is a violation of the laws of the state, which read as follows:

"If any person shall in any way or place wilfully expose an active poison for the destruction of any animal or for

any other purpose except the destruction of rats or other vermin in his own buildings or upon his potato crops, he shall be fined not exceeding fifty dollars, or be imprisoned not exceeding six months, or both."—Section 14, Chapter 266.

The investigations of the department were much broken up by the change in assistants during the year. Mr. A. L. Sullivan, a graduate assistant, resigned in February to accept a position in the Bureau of Internal Revenue, at Washington, D. C., and in July Mr. L. A. Hill, assistant chemist, resigned to accept a position in the research laboratory of the MacLean hospital, Boston. Mr. Harold H. Scudder, recently graduated from Dartmouth college, was appointed assistant chemist July 1st.

Investigations on the acids of corn silage, effect of frost on corn, enzymes in apples and corn fodder, and the respiration of apples at different temperatures have been carried on as opportunity permitted.

DEPARTMENT OF AGRICULTURE.

FRED W. MORSE.

The investigations in this department were limited to field experiments, continuing the rotation of crops begun last year, and testing a number of varieties of corn and forage crops. The weather conditions were extremely unfavorable to our common crops, hence the less common kinds were, as a rule, worthless. Corn failed almost entirely. Winter rye, oats, Canada peas, clovers, timothy, and redtop gave excellent yields of forage. The smaller types of millet, Hungarian grass, and Russian millet were satisfactory, and rape grew well. Three twentieth-acre plats were seeded with alfalfa, July 2, and an excellent stand was secured. But another season is required to determine whether it will withstand the winter.

The often recurring changes in the management of this

department have, of course, resulted in a lack of continuity of investigations and a considerable amount of scattering data. It is planned to have these data assembled and edited during the coming year.

Mr. Herbert M. Tucker, superintendent of the farm, resigned his position April 1, and was succeeded by Mr. Percy A. Campbell, who executed the field work of the season.

DEPARTMENT OF ENTOMOLOGY.

CLARENCE M. WEED.

The work of the year has followed somewhat closely along the lines of previous seasons, with important advances in the way of facilities for field work and the quarters for investigation.

The passage by the legislature of the nursery inspection law and the subsequent appointment by the State Board of Agriculture of the Station entomologist as nursery inspector has made possible and necessary more field work in studying the injurious insects of the state. The department has been moved into more commodious quarters in Nesmith Hall, this being made possible through the removal of the departments of agriculture and horticulture into Morrill Hall.

The investigations and experiments of the year have been chiefly with regard to the following insects:

The Brown-tail Moth.

The San Jose Scale.

The Black Flies.

The Striped Cucumber Beetle.

The Cabbage Worm.

With all of these insects new material for bulletins has been obtained for publication the coming year. Other bulletins upon other insects were published during the year, the list of which will be found on an earlier page.

Mr. Albert F. Conradi, who for some time has been so efficient as assistant entomologist, resigned in August to ac-

cept a more lucrative position, and Mr. J. C. Bridwell was elected to the position in September. During the summer Mr. J. L. Randall served acceptably as assistant in economic work.

DEPARTMENT OF HORTICULTURE.

F. WM. RANE.

The work in this department has followed the general lines heretofore outlined for our investigations in fruit growing, vegetable gardening, floriculture, and forestry.

A new experimental orchard of about five acres was set last spring. This contains a large number of varieties; also various experiments in the nature of cultivation, utilization of rocky soils, fillers, etc. Many observations and experiments in growing all kinds of fruits for New Hampshire have been made. A fruit bulletin is under way which will consider the general question of all varieties of fruits grown in the state and recommend varieties thought to be of most value. Other fruit problems are also under consideration.

A bulletin on vegetable gardening was completed and published during the year. It was our purpose to emphasize the better varieties for planting therein. The usual variety trial tests were made. The season was a poor one but, everything considered, resulted favorably. Even numerous varieties of squashes and pumpkins gave fair success.

The department has constructed during the year a complete new range of greenhouses for which it was given \$7,000 by the legislature last winter. The old greenhouses were torn down and much of the material utilized in the new structure. The new range (see Fig. 1) is composed of a palm house (7), 25 by 55 feet and 18 feet high at the peak; four wings (3, 4, 5, 6), connecting into the palm house, two on either side, each 20 by 37½ feet and 12 feet high at peak. Connecting with the rear of the palm house is a runway (8, 9), 10 feet wide at ends and 34 feet long,

extending back to the potting house. Midway of this, running at right angles and connected with it, are two more greenhouse wings (1, 2), each 20 by 47½ feet and 12 feet high. The potting house (10) is 20 by 30 feet. The

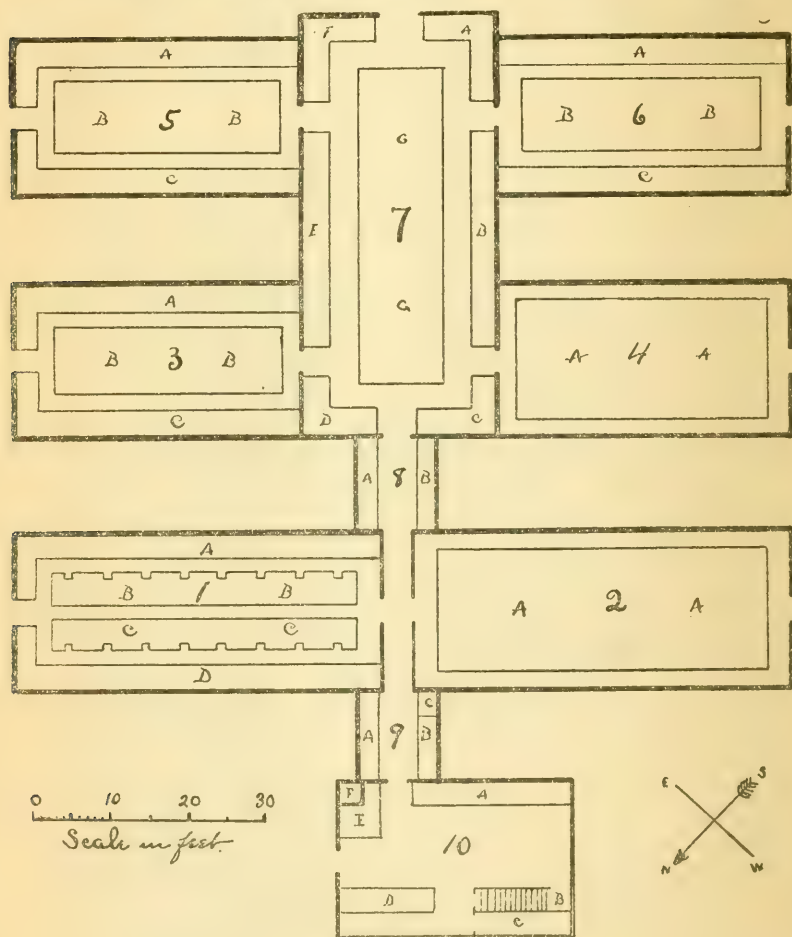


FIG. 1.—Plan of Greenhouses.

basement is utilized as a boiler house. A soil bin is also placed here. The first or main floor is utilized for a general work room and office for doing up packages, weighing, etc.

(d). A large closet (c) is partitioned off for holding the working frocks of students and attendants. A second closet (e) contains the tools and implements. Under the working benches (a) are cupboards for different sizes of flower pots. The attic is partitioned off into two rooms, one for the greenhouse attendant and the other for a store room. The potting house is furnished with a telephone.

The greenhouses are planned for experimental work. Each house contains sufficient piping to grow plants at either high or low temperatures. The houses are so connected that while each is separate from the other the partitions are of glass and their contents are visible from the palm house (7) or passage ways (8, 9). By being able to lock each of the side houses (1, 2, 3, 4, 5, 6), the experimental work is not interfered with. The material for the houses was purchased from the Lord & Burnham company, greenhouse contractors and builders. The palm house (7) and the four wings (houses 3, 4, 5, 6) connected to it are of iron frame construction and erected by that company. Houses 1 and 2 and runway 8, 9 are constructed on the same principles as the former as far as iron posts, gutters, and purlines are concerned, but the roof is made of cypress rafters entirely and the houses are supported by iron posts. In order to have a variety, three kinds of apparatus for lifting ventilators have been put in, the Evans, Lord & Burnham, and the Hub. Houses 2 and 4 have been fitted up for vegetable houses and have ground beds. The remaining houses have raised benches, excepting bed *a* in the palm house (7), which is a ground bed. House 1 has been planned for a laboratory in floriculture. Each student has his bench room assigned to him and here carries on his practical work in floriculture, as mixing soils, making cuttings, watering, transplanting, germinating seeds, etc. Benches *a* and *b* in house 8 and *a* and *b* in house 9 (the runways) are cutting benches. They are so built that bottom heat can be controlled beneath by opening or shutting slide doors as occasion demands.

The whole range is to be wired for electric lighting, is to have cement walks, etc. While there may be more expensive ranges throughout New England, I believe there are none better arranged for the purpose intended. For work in instruction along this line we believe there are no institutions better equipped.

The experimental work in forestry thus far has been carried on under the head of horticulture in the Experiment Station. Various investigations and experiments have been going on for some time in forestry. A bulletin on "Waste Lands Adapted for Forestry" will be in press shortly.

Throughout the year Mr. Harry F. Hall, the assistant horticulturist, has been untiring in his efforts to make the work in the department a success.

PUBLICATIONS OF EXPERIMENT STATION.

The following publications of the Station are available for distribution:

- No. 2. Feeding Experiments.
- No. 3. When to cut Corn for Ensilage.
- No. 4. The Science and Practice of Stock-Feeding.
- No. 5. Fertilizers and Fertilizing Materials.
- No. 6. Experiments with Fertilizers.
- No. 7. Test of Dairy Apparatus.
- No. 8. Feeding Experiments. Part 1. Principles of Feeding. Part 2. Corn Meal, Middlings, Shorts, and Cotton-Seed Compared.
- No. 9. Effect of Food upon Milk.
- No. 11. Pig Feeding. Part 1. Results of Feeding Skim Milk and Corn Meal versus Corn Meal and Middlings. Part 2. Digestion Experiment.
- No. 12. Fertilizer Experiments.
- No. 14. Ensilage in Dairy Farming.
- No. 16. Effect of Food on Composition of Butter Fat.
- No. 17. Stock Feeders' Guide.

- No. 18. Effect of Food on Milk.
- No. 19. Spraying Apples and Pears against Fungi.
- No. 20. Effect of Food on Milk. Feeding with Fats.
- No. 21. Farmyard Manures and Artificial Fertilizers.
- No. 22. Prevention of Potato Blight.
- No. 23. Some Dangerous Fruit Insects.
- No. 24. The Flow of Maple Sap.
- No. 25. The Composition of Maple Sap.
- No. 26. Analysis of Fertilizers and Wood Ashes.
- No. 27. Spraying Experiments in 1894.
- No. 28. Remedies for the Horn Fly.
- No. 29. Remedies for Flea Beetles.
- No. 30. An Experiment in Road Making.
- No. 31. Seventh Annual Report. 1895.
- No. 32. Studies of Maple Sap.
- No. 33. Two Shade-Tree Pests.
- No. 34. Surface and Sub-Irrigation out of Doors.
- No. 35. The Codling Moth and the Apple Maggot.
- No. 36. Analyses of three Common Insecticides.
- No. 37. Crimson Clover.
- No. 38. The Tent Caterpillar.
- No. 39. The Army Worm.
- No. 40. Eighth Annual Report. 1896.
- No. 41. Potatoes: Varieties, Fertilizers, Scab.
- No. 42. Part 1. Tomato Growing in New Hampshire.
Part 2. Notes on Tomato Breeding.
- No. 44. The Cankerworm.
- No. 45. Fruit and Potato Diseases.
- No. 46. Part 1. An Experiment with a Steam Drill.
Part 2. Methods of Road Maintenance.
- No. 48. Ninth Annual Report. 1897.
- No. 53. The Farm Water Supply.
- No. 56. Poisonous Properties of Wild Cherry Leaves.
- No. 57. Forage and Root Crops.
- No. 58. Cost of Raising Calves.
- No. 59. Tenth Annual Report. 1898.
- No. 60. Green Corn under Glass.

- No. 61. Inspection of Fertilizers in 1898.
- No. 62. Forcing Pole Beans under Glass.
- No. 64. The Forest Tent Caterpillar.
- No. 66. Experiments in Pig Feeding.
- No. 67. The Spiny Elm Caterpillar.
- No. 68. Eleventh Annual Report. 1899.
- No. 69. Inspection of Fertilizers in 1899.
- No. 70. Experiments with Muskmelons.
- No. 71. Corn Culture.
- No. 72. Insect Record for 1899.
- No. 74. Growing Strawberries in New England.
- No. 75. The Forest Tent Caterpillar. Second Report.
- No. 76. Utilizing the Greenhouse in Summer.
- No. 77. Experiments in Road Surfacing.
- No. 78. Bovine Tuberculosis.
- No. 79. Twelfth Annual Report. 1900.
- No. 80. Inspection of Fertilizers in 1900.
- No. 81. Insect Record for 1900.
- No. 82. Feeding Farm Horses.
- No. 83. Value of Meadow Muck.
- No. 84. Forcing Dwarf Tomatoes.
- No. 85. Remedies for the Cankerworm.
- No. 86. Growing Watermelons in the North. Classification of Watermelons.
- No. 87. Thirteenth Annual Report. 1901.
- No. 88. Inspection of Fertilizers, 1901, Analyses of Ashes, etc.
- No. 89. The Squash Bug.
- No. 90. Insect Record for 1901.
- No. 91. Killing Woodchucks with Carbon Bisulphide.
- No. 92. Silage Studies.
- No. 93. The Cold Storage of Apples.
- No. 94. Remedies for Fleas.
- No. 95. How to Grow a Forest from Seed.
- No. 96. Fourteenth Annual Report. 1902.
- No. 97. Inspection of Fertilizers. 1902.
- No. 98. Inspection of Feeding-Stuffs. 1902.

- No. 99. Selected List of Vegetables for the Garden.
- No. 100. White Fly of Greenhouses.
- No. 101. Fungous Diseases and Spraying.
- No. 102. Insect Record. 1902.
- No. 103. Standard Milk.
- No. 104. Fifteenth Annual Report. 1903.
- No. 105. Fruit Growing, with varieties for New Hampshire.
- No. 106. Forestry.
- No. 107. Brown-tail Moth in New Hampshire.
- No. 108. Inspection of Fertilizers in 1903.
- No. 109. The San Jose Scale in New Hampshire.
- No. 110. Experiments in Orchard Management.
- No. 111. Experiments in Potato Culture.
- No. 112. Remedies for the Black Fly.
- No. 113. Experiments in Pig Feeding.

NEW HAMPSHIRE COLLEGE
AGRICULTURAL EXPERIMENT STATION.

Sixteenth Annual Report

NOVEMBER 1, 1903, TO OCTOBER 31, 1904.

AGRICULTURAL EXPERIMENT STATION.

BOARD OF CONTROL.

HON. JOHN G. TALLANT, *Chairman*, Pembroke.

HON. GEORGE A. WASON, New Boston.

CHARLES W. STONE, A. M., *Secretary*, East Andover.

HON. WARREN BROWN, Hampton Falls.

PRES. WILLIAM D. GIBBS, *ex-officio*, Durham.

STATION COUNCIL.

WILLIAM D. GIBBS, M. S., *Director*.

FRED W. MORSE, M. S., *Chemist and Vice-Director*.

*CLARENCE M. WEED, D. Sc., *Entomologist*.

FRANK WILLIAM RANE, B. Ag., M. S., *Horticulturist*.

FREDERICK W. TAYLOR, B. S., *Agriculturist*.

EDWARD L. SHAW, B. S., *Associate Agriculturist*.

HARRY F. HALL, *Associate Horticulturist*.

ASSISTANTS.

JOHN C. BRIDWELL, B. S., *Assistant Entomologist*.

H. D. BATCHELOR, B. S., *Assistant Chemist*.

EDITH M. DAVIS, *Purchasing Agent*.

MABEL H. MEHAFFY, *Stenographer*.

* Resigned September 1, 1904.

SIXTEENTH ANNUAL REPORT.

ANNUAL STATEMENT.

Of the Hatch fund of the New Hampshire College of Agriculture and the Mechanic Arts, for the year ending June 30, 1904.

RECEIPTS.

Cash received from United States treasurer . \$15,000.00

EXPENDITURES.

Cash paid for salaries	\$8,549.29
labor	1,807.16
publications	1,858.45
postage and stationery	82.18
freight and express	141.48
heat, light, water and power	123.25
chemical supplies	140.15
seeds, plants and sundry supplies	264.76
fertilizers	220.09
feeding stuffs	162.13
library	173.82
tools, implements, and machinery	266.28
furniture and fixtures	188.82
scientific apparatus	515.33
live stock	78.00
traveling expenses	178.03
contingent expenses	22.67
buildings and repairs	228.11
	<hr/>
	\$15,000.00

We, the undersigned, duly appointed auditors of the corporation, do hereby certify that we have examined the books and accounts of the New Hampshire Agricultural Experiment Station for the fiscal year ended June 30, 1904; that we have found the same well kept and classified as above, and that the receipts for the year from the treasurer of the United States are shown to have been \$15,000, and the corresponding disbursements, \$15,000; for all of which proper vouchers are on file and have been by us examined and found correct.

And we further certify that the expenditures have been solely for the purposes set forth in the act of congress approved March 2, 1887.

Signed,

C. H. PETTEE,
Auditor.

Attest:

WALTER M. PARKER,
Custodian.

SUPPLEMENTARY STATEMENT.

RECEIPTS.

Cash received, analytical fees, etc. . . .	\$1,129.21
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EXPENDITURES.

Cash paid for labor	\$180.26
freight and express	3.25
heat, light, and water	468.13
contingent expenses	45.00
buildings and repairs	78.07
balance	354.50
	<hr/>
	\$1,129.21

REPORT OF THE DIRECTOR.

Nov. 1st, 1904.

WILLIAM D. GIBBS.

Satisfactory progress has been made in the work of the year just closing. Since the publication of the last annual report, the following bulletins have been issued in editions of 15,000 each and distributed free of charge :

105. Fruit Growing, with a selected list of Varieties, for New Hampshire (illustrated), 24 pages.
106. Forestry (illustrated), 20 pages.
107. The Brown-Tail Moth in New Hampshire (illustrated), 16 pages.
108. Inspection of Fertilizers, 1903, 12 pages.
109. The Pernicious or San Jose Scale Insect in New Hampshire (illustrated), 12 pages.
110. Experiments in Orchard Management in New England (illustrated), 24 pages.
111. Ten Experiments with Potatoes and Potato Culture for New England (illustrated), 24 pages.
112. Remedies for the Black Fly (illustrated), 8 pages.
113. Experiments in Pig Feeding (illustrated), 8 pages.

In addition to the above, 14 newspaper bulletins, containing summaries of regular bulletins, have been sent to agricultural papers and to the press of the state.

Large numbers of requests for bulletins have been received from all parts of the United States as well as from citizens of the state. The mailing lists have grown to such an extent that it was found necessary to install a mailing machine in order to get the bulletins out promptly.

A department of Dairy Manufactures was added to the Station Work during the year in charge of Instructor Ivan C. Weld, who now has in press a bulletin on "The Babcock Test for Butter Fat," and another in preparation on

“The Extent and Distribution of the Dairy Industry in New Hampshire.”

A large amount of experimental work has been done during the season by the Agricultural Department, the results of which will appear in bulletins during the winter months.

The Station met with a serious loss in the resignation of Prof. C. M. Weed, September 1st, to accept a position in the Lowell, Mass., Normal School.

The installment of the agricultural and horticultural departments in the New Agricultural Building, and the completion of the new range of greenhouses, costing \$7,000, adds material efficiency to the Station work.

The progress of the Station departments will be found under the appropriate headings, as reported by the officers in charge.

DEPARTMENT OF CHEMISTRY.

FRED W. MORSE.

The Department of Chemistry has continued a portion of its investigations on the respiration of apples and the composition of silage. An investigation of the soils of the College Farm has been planned, and much preliminary work done in comparing various methods of soil analysis.

There has been more work than usual in connection with the inspection of feeding-stuffs and fertilizers for the Board of Agriculture. Fifty samples of feeding-stuffs and one hundred and twenty-one samples of fertilizers were received and analyzed under these two inspections.

Several analyses of feeding-stuffs were analyzed for the agriculturist of the Station in connection with feeding-experiments. The usual number of miscellaneous analyses of milk, peat, ashes, and cattle-foods were made for individual farmers.

Two samples of flour-middlings were received which are of interest, because of their unusual composition.

One sample was received from Plymouth and the other from Wolfeborough.

Both samples were slightly darker than the average and with a tint resembling clay. In both cases the buyers thought them adulterated with clay. In one case, the jobber claimed the material to be pure middlings from macaroni wheat.

Protein, fat, and ash were determined in each with the following results:

Sample.	Protein.	Fat.	Ash.
Plymouth.....	12.34	2.09	1.34
Wolfeborough.....	13.43	2.23	1.55

They are evidently not adulterated with any earthy matter, because the ash is low. The protein is unusually low for flour middlings, and also the fat. They apparently contain an unusual amount of flour.

Mr. Harold H. Scudder resigned his position as assistant chemist April 15, and the vacancy was filled a month later by the appointment of Mr. Harry D. Batchelor, a graduate of the college in 1902.

DEPARTMENT OF HORTICULTURE.

F. W. M. RANE.

The work of this department during the year has continued along rather well defined lines, similar in many respects to that reported upon in previous years. Fruit growing, vegetable gardening, floriculture, and forestry have each received attention from the standpoint of experimentation in so far as time would permit.

This department published four bulletins during the year as follows:

January Bulletin, No. 105. "Fruit Growing, with a selected list of Varieties for New Hampshire."

February Bulletin, No. 106. "Forestry.

I. How to make a beginning.

II. Waste Lands: How to convert them into Forests."

March Bulletin, No. 110. "Experiments in Orchard Management in New England."

April Bulletin, No. 111. "Ten Experiments with Potatoes and Potato Culture in New England."

All of the above bulletins have been well received and from the complimentary letters, together with the continued demand for the information here given, it is believed they are being of much service generally.

The investigations and experiments particular to this season have been chiefly as follows:

(1) PLANT BREEDING.

Systematic work was outlined last spring and has been carried out during the summer and fall in this work. The plants in use are Muskmelons, Watermelons, Tomatoes, Peppers, Cucumbers, Potatoes, and Squash. Very interesting data have been secured and a beginning made which should eventually give valuable results. I hope that this department may give more attention to this work in the future.

(2) FORESTRY EXPERIMENTS.

We have secured some valuable data on forestry. Definite data as to collecting seeds, digging, and transplanting pine tree seedlings, their cost, estimates of handling, etc.

(3) VALUE OF BUG DEATH.

An experiment planned and carried out as to the value of this insecticide has been conducted during the season.

(4) SPRAYING EXPERIMENTS.

As per granted request of the board at the last meeting, we were enabled to carry out the spraying work in a satisfactory manner throughout this season.

(5) EXPERIMENTS WITH THE CABBAGE MAGGOT.

Some well directed work was begun in an attempt to control this insect. Much valuable data have been gathered and a satisfactory beginning made in overcoming the destructive habits of this pest. It will take at least another season to complete the experiment.

(6) EXPERIMENTS IN PROPAGATING HARDY CUTTINGS.

During the summer Mr. Hall visited the Arnold Arboretum and secured a large number of hardy cuttings. This, together with what has already been done, makes a good beginning. Our aim is to ultimately have all of the shrubs that will withstand our climate.

(7) EXPERIMENTS WITH APPLES IN COLD STORAGE.

Experiments under this head have been carried on for a number of years. I am interested in continuing this work this season and at present we are making arrangements with a commission house in Boston to handle two hundred barrels in cold storage to be sold at various times during the season. There are a number of individual things that are being considered in the same connection, as: nature of packing, particular sorting, varieties for best keepers, color values, time of picking, etc.

(8) VARIETY TESTING EXPERIMENTS.

Our experiments in testing varieties have been up to standard this season and we take pride in the fact that they were complimented by an expert of the U. S. Department of Agriculture.

(9) PROPOSED EXPERIMENTS.

It will require most of our available time for the winter in compiling the accumulated data of the present season. Our usual experimental work under glass will be continued. The plant breeding work, already spoken of, is to

receive as much attention as possible. At this season of the year our plans for next season are also developing.

The new range of greenhouses offers excellent facilities for experimentation. Our work in all lines of greenhouse management and manipulation is getting well under way.

Mr. Harry F. Hall, who for some time has been assistant horticulturist, was promoted to associate horticulturist in June. Mr. Henry M. Sherbert, a graduate of the two-year course in agriculture last June, has been retained as manager of the greenhouses. Mr. Wesley P. Flint, also a graduate in the two-year course last June, is assisting in forestry and general horticulture while pursuing special work in these lines in the college.

DEPARTMENT OF AGRICULTURE.

F. W. TAYLOR.

The following is a brief and summarized report of the work carried on by the Agricultural Department during the past year :

Considerable work has been done in the reorganization of the department since September 1, 1903. The herd of cattle has been diminished about one half, all of the poorer representatives having been disposed of, and a small number of the best individuals of the different breeds purchased in their stead. A good breeding basis of the Jersey, Guernsey, Shorthorn, and Ayrshire breeds has now been secured.

A beginning has been made in the raising of swine, the Berkshire and Medium Yorkshire breeds being represented by excellent individuals. A flock of thoroughbred Southdown sheep has also recently been secured. Much stress has been laid upon the importance of securing representative animals of all the different breeds of live stock purchased, inasmuch as these animals are used both for the purpose of instruction and experimentation.

During the past season a comparative test of the yield

of fifteen varieties of corn has been made on one-tenth acre plots. The varieties tested were the following: Longfellow, Improved Yellow Flint, Minnesota King, Sanford's Early White, Angel of Midnight, Race Horse, Early Yellow Canada, Campbell's Best, Thompson, Clarage, Pride of the North, King of the Earlies, Thoroughbred White Dent, Currie's Earliest of All, and Early Longfellow Dent. A test of the yield of ear corn from thick and thin planting has also been made on duplicate twentieth acre plots.

A comparative test of thirteen varieties of oats was made on tenth acre plots. The following varieties were tested: Lincoln, Black Gotham, Welcome, Mortgage Lifter, Michigan, Wonder, Improved Prize Cluster, English Wonder, Silver Mine, Black Tartarian, White Maine, White Russian, Golden Fleece, and Mold's Black.

In forage crops the following tests were made:

- (a) Methods of securing a stand of alfalfa.
- (b) Four varieties of millets.
- (c) Three varieties of mangels.
- (d) Two varieties of sugar beets.
- (e) Three varieties of clover.
- (f) Oats and Canada peas.
- (g) Soy beans, velvet beans, cow peas, and rape.

A comparative test on one fourth acre plots of the cost and effect of different fertilizers on the yield of hay was made.

During August and September a sixty-day feeding experiment with heavy and light oats was conducted. The data on this work embody the results of a chemical analysis of the oats, the relative proportion of hull to kernel in the different grades, and a practical feeding test of them on the six work horses of the college.

A thirty-day feeding test of sweet apples has just been completed on pigs. The pigs in the test received only apples and water, and during the thirty days made an average gain of only one and one half pounds. The results show that apples alone afford only a maintenance ration.

Several other tests on raw and cooked potatoes, "Union grains," and mixed feeds are contemplated for this winter.

In order to secure a field with uniform soil conditions suitable for crop and fertilizer experiments, the four acres of ground, west of the dairy barn and adjacent to the brook, has been laid off into thirty permanent one-tenth acre plots, 217 feet eight inches long, and 20 feet wide, with a two-foot alley-way between them, and into seventeen one-twentieth acre plots, having the same width as the tenth acres. To secure uniform surface drainage, each plot has been plowed as a separate land, with dead furrows coming in the alley-ways. Between every other plot a three-inch tile drain is being laid at an average depth of two and one half feet. The laterals empty into a four-inch main, which runs parallel with the brook and across the plots, 22 feet from their ends. This complete system of tiled drainage is being installed this fall.

An experiment to show the effect of lime on heavy clay soils has just been begun. One half of each of the plots mentioned above has received an application of newly slaked lime at the rate of 40 bushels per acre. Only one half of each plot was limed to show the effect, if any, on whatever succeeding crop may be grown on the plot.

One bulletin, No. 113, "Experiments in Pig Feeding," was published during the year. Three others are now in the course of preparation, *i. e.*, "The relative cost and feeding value of light and heavy oats"; "Underdrainage," with the results of our own work used as a practical basis; "Field Crops," stating the results of the season's work in all plot and field experiments.

DEPARTMENT OF ENTOMOLOGY.

JOHN C. BRIDWELL, ASSISTANT ENTOMOLOGIST.

The work of the department has followed along much the same lines as in previous years, with certain develop-

ments and extensions made possible by the more ample accommodations for work in the new quarters in Nesmith Hall. Thus a rearrangement of the insect collections has been made and the work of classifying certain groups has advanced nearly to completion.

The study of the New Hampshire Bumblebees has occupied considerable time. The Station collection of these bees has been carefully studied and the data accumulated in the department have been compiled and many additional observations made.

The work upon the San Jose Scale and the Brown-tail Moth has been continued and wider observations have been possible by the continuance of the Station entomologist as state nursery inspector. In this way the department has had oversight of the work against the Brown-tail Moth in the city of Portsmouth and other places. Bulletins have been issued in regard to each of these pests.

The study of remedies for Black Flies has been carried forward, and a bulletin, giving the result of the work, has been issued.

The work of the Department of Botany has been largely routine work, though many additional illustrations have been made.

Mr. W. P. Flint served very acceptably during the summer as student assistant, co-operating with the Department of Horticulture in the control of insect and fungus pests.

THE INSECT RECORD FOR 1903.

By CLARENCE M. WEED.

The year 1903 is notable so far as our knowledge of the injurious insects of New Hampshire is concerned by the discovery of a serious infestation of the Brown-tail Moth in the southeastern corner of the state, and the discovery of the San Jose Scale in several new localities. The probability that these insects would be so found has been repeatedly stated in previous issues of this series of Insect

Records, while the insects mentioned have been discussed at length in the recently issued Bulletin 109 and Bulletin 111. The year is also notable for the passage of the Nursery Inspection law, which undoubtedly has had a tendency to check the further introduction of these pests.

I have no evidence as yet of the presence of the Gypsy Moth in New Hampshire, though I should not be surprised to hear of its presence in almost any part of the state. This is on the whole the most dangerous insect enemy that threatens us. It is present in vast numbers throughout a wide area in Massachusetts and there is heavy and continuous traffic from this infested region into our state. Freight and passenger trains, horses and carriages, and automobiles are constantly entering our borders, after traversing the infested region. It will be strange indeed if the insect is not brought to us by some of these. And it is by no means certain that the first outbreak will occur along the southern part of the state; it may easily occur in some central or northern region. It is highly important, therefore, that citizens all over the state be warned of the danger from the pest, and be on the alert for any strange hairy caterpillar that attacks the foliage of trees and shrubs. Should this omnivorous pest get a foothold in our beautiful mountains, it would be a most serious calamity, affecting the welfare of the state to an extent that few of our citizens now realize.

FRUIT INSECTS.

The bark-lice of apple and other trees—notably the Oyster-shell Bark-louse and the Scurfy Bark-louse—have continued to attract the attention of fruit growers throughout the state, and have doubtless been doing considerable damage in regions where their presence has not been noticed. Both species have repeatedly been sent to the station with the query as to whether they were the San Jose Scale.

The Apple Aphis was unusually abundant in the southern part of New Hampshire during the early summer. The

injury to the young twigs of newly set trees was quite serious. In a small plantation of such trees I found that dipping the infested twigs in a rather weak solution of Bowker's Tree Soap was practicable and efficient. The comparatively few twigs on each tree were bent down and held in the solution a moment, the liquid thus reaching all of the insects among the folded leaves.

Considerable local damage was done by the Canker-worm. A series of experiments conducted by us and not heretofore reported showed that this pest can be controlled by spraying with arsenate of lead or disparene. Our experience emphasized, however, the necessity for early spraying in order that the worms may be killed before too much damage to the foliage is done.

Another apple insect that attracted considerable notice was the Red-humped Apple Caterpillar, which was locally destructive in many parts of the state. This is an insect of peculiar appearance that feeds in colonies upon the leaves of apple trees. It is usually destroyed by simply cutting off the infested twig and killing the larvæ.

The American Tent Caterpillar is slowly increasing in numbers, though the increase in 1903 over 1902 was not so great as had been expected. The good work of birds in keeping these caterpillars in check was very evident, the Baltimore Orioles being especially efficient. The apple maggot was locally quite destructive.

The Apple Leaf-hopper, which was so abundant in 1901 and scarce in 1902, continued scarce in 1903. The insect will probably not become again destructive for several years.

As usual the Plum Curculio was destructive to plums and cherries, and also did considerable damage to apples, causing much of the fruit to be deformed. The Codling Moth was about as injurious as in other recent years.

The various saw-fly larvæ, especially the Imported Currant Worm, the Pear Slug, and the Rose Slug, did about the usual damage.

These pests are very easily killed by the use of hellebore, or any of the arsenical insecticides.

VEGETABLE INSECTS.

It has been long acknowledged that one of the most perplexing problems in economic entomology is that of the sudden and often apparently unaccountable increase or decrease in the numbers of a large proportion of our insect pests. Reasons for these fluctuations have often been suggested: weather conditions, parasitic and predaceous enemies, birds, and fungous diseases doubtless at times are potent factors in the mysterious changes.

During the season of 1903 there was a very extraordinary attack throughout a large part of New England of the various root-maggots of the genus *Anthomyia*. Cabbages, cauliflowers, and onions were infested to an extent that completely ruined the crop for hundreds of growers. In other years these insects have been vexatious, and occasionally very destructive, but there was a general agreement that the damage this past season was greater than had before been known.

In thinking over possible reasons for this unusual attack, which in my own garden cleaned out rows of onions as fully as could be done with fire, I happened one day to pull up a wild mustard plant and found its roots completely covered with *Anthomyia* larvæ. On looking for other mustard plants I was surprised to find them very scarce, and I realized that the ground, which recently came into my possession completely stocked with the seeds of wild mustard, had grown this season very few of these plants. In previous seasons they have sprung up by thousands. It was evident also that it was not a case where the plants had started and been killed by *Anthomyians*; the plants had not come up at all. And the reason was not far to seek. In early spring, when the wild mustard usually starts, we had an extraordinary drouth which prevented the germination, not only of the seeds planted by the gar-

dener, but also those planted by nature. Of the last the wild mustard is a conspicuous example.

Further observations and inquiries led me to this tentative conclusion:

That usually the wild mustard and allied cruciferous species act as natural trap plants for the eggs of the Anthomyians, germinating abundantly earlier than do cultivated crops and that this year the failure of the natural trap plants compelled the flies to wait for oviposition until the cultivated plants were ready, thus leading to the extraordinary attack upon them.

These Anthomyians are so difficult to combat that it seems to me this suggestion is at least worth further consideration in the way of observation and experiment.

During late summer and early autumn, the Zebra Caterpillar attracted much attention from owners of gardens. This is a caterpillar with curious black and yellow markings upon its body. It hatches from eggs laid upon the leaves of cabbage and other plants by a purplish brown moth. At first, the larvæ are very dark and feed together in colonies, but as they grow older they become lighter in color and disperse over the plant. When disturbed, they curl up and drop to the ground. They become full grown in a few weeks, when they are about two inches long, with a wide, longitudinal, velvet-black stripe upon the middle of the back, and two bright yellow stripes upon each side, these latter being connected with each other by five yellow transverse lines. The full-grown caterpillars construct loose cocoons slightly beneath the soil surface, the cocoons being composed of particles of earth fastened together by silken threads. They change to pupæ within these cocoons, and the moths emerge later.

The Black Squash Bug, which so suddenly disappeared in 1902, continued extraordinarily scarce, doing practically no damage to vines. The little Striped Cucumber Beetles, however, were exceedingly destructive, both in their adult and larval stages. Our experience this season demonstra-

ted the necessity of keeping the beetles away from the young plants in order that their eggs may not be laid about the roots. The larvæ that hatch from these eggs burrow through the base of the stalk and the roots and do a great deal of damage. The liberal application of tobacco powder to the hills is the best remedy I have found.

Among the other garden insects, about the usual damage was done. The Bean Weevil continued destructive, as did also the Pea Weevil, while early in the season the flea-beetles were very troublesome on potatoes, tomatoes, and similar crops.

METEOROLOGICAL REPORT.

1902 -- 1903.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

July, 1902.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m. wet.	8 p. m. wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	63	29.592	66	29.710	55	56	53	55	64	54	....	56
2	66	29.850	72	29.900	65	67	57	58	72	48	....	67
3	66	29.750	70	29.820	61	61	59	56	68	54	....	61
4	68	29.842	79	29.912	68	72	60	64	80	57	....	72
5	70	29.634	73	29.632	62	63	59	60	81	61	....	63
6	70	29.424	60	29.490	68	57	59	56	81	57	....	57
7	64	30.000	72	29.853	57	67	55	65	78	45	....	67
8	72	29.778	83	29.716	67	79	63	71	89	64	....	79
9	81	29.710	83	29.608	78	78	68	69	88	57	....	78
10	75	29.550	75	29.726	68	65	67	56	78	64	....	65
11	72	29.774	74	29.808	65	66	56	58	75	53	....	66
12	73	29.758	78	29.734	69	70	60	62	82	47	....	70
13	77	29.750	82	29.732	71	75	63	67	86	56	....	75
14	80	29.712	83	29.710	75	78	67	72	89	63	....	78
15	81	29.594	79	29.452	74	65	69	65	87	64	....	65
16	75	29.460	73	29.532	67	61	59	55	72	57	....	61
17	70	29.712	74	29.456	62	68	55	63	75	50	....	68
18	75	29.582	75	29.808	72	68	64	59	78	62	....	68
19	69	29.760	69	29.790	64	61	60	60	71	57	....	61
20	66	29.638	62	29.624	58	58	57	57	62	57	....	58
21	63	29.588	63	29.580	58	59	57	58	63	57	....	59
22	62	29.604	66	29.684	59	61	58	60	66	56	....	61
23	66	29.806	72	29.882	64	63	62	61	70	58	....	63
24	67	29.934	68	29.938	62	60	60	59	67	59	....	60
25	66	29.936	66	29.940	67	59	59	58	65	57	....	59
26	63	29.944	65	29.884	60	60	58	59	63	52	....	60
27	67	29.830	70	29.726	64	66	62	60	73	57	....	66
28	72	29.662	80	29.690	70	76	68	70	83	63	....	76
29	74	29.692	76	29.778	69	69	67	67	79	62	....	69
30	73	29.804	78	29.856	71	69	66	63	80	65	....	69
31	75	29.762	80	29.820	71	70	67	63	87	53	....	70
Sum..	.....	.....	.....	.....	2041	2047	1894	1906	2352	1767	....	.....
Mean..	.....	.....	.....	.....	65.2	65.4	61.1	61.5	75.9	57.	....	.....

RECORD, JULY, 1902.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

July, 1902.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1	12 a. m.	12.30 p. m.	.16	.....	S. E.	Cloudy	Mean maximum
2					N. W.	Clear	temperature, 76.
3	10 a. m.	3 p. m.	1.10	.....	N. W.	Cloudy	Mean minimum
4					N. W.	Clear	temperature, 57.
5					N.	Clear	Maximum temper-
6					N. W.	Clear	ature, 89; date,
7					N. W.	Clear	8th, 14th.
8					W.	Clear	Minimum temper-
9	9 p. m.				W.	Clear	ature, 45; date,
10		8 a. m.	.16	.....	N. W.	Part cloudy..	7th.
11					N. W.	Clear	Mean temperature,
12					S. W.	Clear	66.4.
13					W.	Clear	Total precipita-
14	10 p. m.	{ 2 a. m.			N. W.	Part cloudy..	tion, 3.39 inches.
15	3 p. m.	{ 8 p. m.	.75		S. W.	Part cloudy..	Greatest precipi-
16					N. W.	Part cloudy..	tation in 24 hours,
17					S. W.	Cloudy	1.10; date, 3d.
18			†		N. W.	Cloudy	Number of days
19	6.30 p. m.		.40		W.	Cloudy	with .01 inch or
20		10 p. m.	.72		E.	Cloudy	more precipita-
21	Mist.	all day.	.07		E.	Cloudy	tion, 8; clear, 11;
22					E.	Cloudy	partly cloudy, 10;
23	4 a. m.		.03		S. E.	Part cloudy..	cloudy, 10.
24			†		S. E.	Part cloudy..	Dates of thunder
25					S. E.	Part cloudy..	storms, 14th, 15th,
26					S. E.	Cloudy	and 17th.
27					S. W.	Cloudy	On the 18th a large
28					W.	Part cloudy..	circle around the
29					S.	Part cloudy..	moon.
30					S. E.	Part cloudy..	
31					S.	Clear	
Sum.			3.39	....		

* Including rain, hail, sleet, and melted snow.

† Trace.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

August, 1902.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	75	29.770	78	29.736	71	70	65	67	83	59	....	70
2	76	29.726	75	29.696	72	68	70	67	83	62	....	68
3	75	29.582	78	29.600	66	69	65	67	75	63	....	69
4	78	29.550	78	29.534	74	69	68	67	84	63	....	69
5	76	29.580	74	29.68	70	63	65	62	74	62	....	63
6	72	29.600	71	29.362	65	61	65	64	66	62	....	65
7	73	29.350	75	29.500	68	64	61	57	76	62	....	64
8	67	29.506	72	29.530	58	66	57	62	73	56	....	66
9	72	29.720	76	29.772	67	67	60	66	80	54	....	67
10	73	29.920	73	29.822	68	67	62	64	77	54	....	67
11	70	29.662	73	29.576	65	68	65	68	74	63	....	68
12	71	29.528	68	29.644	68	60	60	50	76	60	....	60
13	68	29.820	70	29.800	59	61	50	55	71	42	....	61
14	69	29.786	74	29.732	64	66	59	60	79	47	....	66
15	75	29.712	73	29.604	68	65	62	62	79	53	....	65
16	68	29.702	67	29.492	61	58	53	52	71	53	....	58
17	69	29.508	66	29.528	60	59	52	50	69	48	....	59
18	65	29.500	70	29.562	60	63	53	58	72	47	....	63
19	65	29.590	65	29.588	57	59	56	55	66	53	....	59
20	68	29.694	70	29.758	66	62	60	57	76	51	....	62
21	68	29.720	65	29.512	63	60	60	59	69	53	....	60
22	66	29.586	69	29.530	61	63	60	60	73	56	....	63
23	63	29.506	65	29.670	59	59	58	56	65	52	....	59
24	65	29.734	67	29.740	63	64	57	60	70	51	....	64
25	65	29.736	67	29.670	62	60	59	60	73	53	....	60
26	71	29.654	75	29.658	66	70	61	65	82	51	....	70
27	73	29.724	74	29.800	68	65	63	62	84	54	....	65
28	62	29.940	68	29.984	61	61	55	56	71	57	....	61
29	70	30.012	72	29.962	66	61	59	58	75	55	....	61
30	71	29.936	.....	.....	68	67	63	.....	82	52	....	67
31	.....	.....	.....	.....	61	67	.....	.....	78	54	....	67
Sum...	.....	.....	.....	.....	2005	1986	1803	1746	2326	1702	....	1986
Mean..	.....	.....	.....	.....	64.7	64.1	60.1	60.2	75.03	54.9	....	64.1

RECORD, AUGUST, 1902.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

August, 1902.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	Amount.*	Snowfall in inches.			
1	.....	.....	.....	.....	S.	Part cloudy..	Mean maximum
2	.....	.....	.....	.....	N. E.	Part cloudy..	temperature, 75.0.
3	.....	.....	.....	.....	S. E.	Clear	Mean minimum
4	.....	.....	t.	.....	E.	Part cloudy..	temperature, 54.9.
5	.....	.....	.....	.....	S. E.	Clear	Mean temp., 65.
6	7.30 a. m.	3.45 p. m.	1.05	.....	S. E.	Cloudy	Maximum temper-
7	.....	.....	.....	.....	N. W.	Clear	ature, 84; date, 4th
8	6.15 a. m.	8.15 p. m.	.30†	.....	N. W.	Cloudy	and 27th.
9	.....	.....	.....	.....	W.	Part cloudy..	Minimum temp, 42;
10	.....	.....	.....	.....	S.	Part cloudy..	date, 13th.
11	6.15 a. m.	9.30 p. m.	2.23	.....	S. W.	Cloudy	Total precipita-
12	.....	.....	.....	.....	N. W.	Clear	tion, 5.81 inches.
13	.....	.....	.....	.....	N. W.	Clear	Greatest precipita-
14	.....	.....	.....	.....	W.	Clear	tion in 24 hours,
15	5.30 p. m.	8.30 p. m.	.44	.....	N. W.	Part cloudy..	2.23 in.; date, 11th.
16	.....	.....	.....	.....	N. W.	Clear	Number of days
17	.....	.....	.....	.....	N. W.	Clear	with .01 inch or
18	.....	.....	.....	.....	W.	Part cloudy..	more precipita-
19	.....	.....	t.	.....	W.	Cloudy	tion, 8; clear, 13;
20	.....	.....	.....	.....	S.	Clear	partly cloudy, 11;
21	1.30 p. m.	5.45 p. m.	.35	.....	S.	Cloudy	cloudy, 7.
22	6.10 p. m.	6.30 p. m.	t.	.....	S.	Cloudy	Dates of thunder-
23	4 a. m.	7 a. m.	1.26	.....	N. E.	Cloudy	storms, 4th, 11th,
24	.....	.....	.....	.....	N. E.	Part cloudy..	23d, and 25th.
25	12.15 m.	3.40 p. m.	.14	.....	S. E.	Part cloudy..	On 4th, storms were within ½ mile of station.
26	.....	.....	.....	.....	N. W.	Part cloudy..	
27	.....	.....	.....	.....	S.	Clear	
28	8.15 p. m.	8.30 p. m.	.04	.....	S.	Part cloudy..	
29	.....	.....	.....	.....	S.	Clear	
30	.....	.....	.....	.....	S. W.	Clear	
31	.....	.....	.....	.....	W.	Clear	
Sum.	.....	.....	5.81	.....		
.....			

* Including rain, hail, sleet, and melted snow.

† Showers at 3 and 4.30 p. m. t.—trace.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

September, 1902.	8. A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	72	29.621	81	29.600	67	77	61	70	91	60	....	77
2	79	29.656	76	29.700	72	68	70	58	83	67	....	68
3	71	29.828	72	29.756	64	63	59	62	78	51	....	63
4	72	29.560	72	29.560	67	63	66	59	78	60	....	63
5	62	29.720	62	29.928	57	53	48	48	64	51	....	53
6	61	30.118	63	30.050	54	55	49	52	63	35	....	55
7	61	29.876	65	29.744	58	64	58	64	70	50	....	64
8	68	29.828	71	29.790	65	64	57	60	80	55	....	64
9	61	29.760	68	29.514	56	62	55	62	71	48	....	62
10	68	29.500	68	29.718	58	56	52	52	68	43	....	56
11	65	29.860	68	29.800	55	55	52	53	71	43	....	55
12	64	29.942	68	29.914	55	60	53	57	73	43	....	60
13	64	29.832	65	29.700	63	59	60	58	73	48	....	59
14	61	29.822	64	29.860	55	52	50	47	66	49	....	52
15	60	29.928	68	29.874	50	51	47	50	68	36	....	51
16	61	30.000	62	30.010	55	53	53	52	70	42	....	53
17	61	30.070	61	30.068	60	55	56	51	68	48	....	55
18	58	30.038	62	29.988	55	57	53	55	62	50	....	57
19	59	29.600	64	29.980	57	60	57	59	65	55	....	60
20	61	30.042	63	30.080	60	55	59	54	64	55	....	55
21	61	30.070	63	30.000	55	53	55	52	61	53	....	53
22	62	29.900	55	29.800	58	57	57	56	65	56	....	57
23	65	29.732	69	29.604	60	63	58	61	79	50	....	63
24	68	29.732	57	29.750	67	52	57	45	68	50	....	52
25	57	30.000	59	30.000	56	48	53	47	58	37	....	48
26	56	29.950	60	29.800	51	55	48	55	59	44	....	55
27	58	29.734	62	29.582	56	61	54	61	61	38	....	61
28	62	29.533	65	29.522	62	62	62	61	69	57	....	62
29	63	29.500	65	29.560	59	61	59	60	63	61	....	61
30	65	29.550	65	29.530	63	60	63	60	64	48	....	60
Sum...	.....	.....	.....	.....	1770	1755	1681	1681	2073	1483	.....	.....
Mean..	.....	.....	.....	.....	59.0	58.5	56.0	56.0	69.1	49.4	.....	.....

RECORD, SEPTEMBER, 1902.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

September, 1902.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1	.....	.....	.....	.....	W.	Clear.....	Mean maximum
2	Night.	.....	.05	.....	N. W.	Clear.....	temperature, 69.1.
3	7 a. m.	7.45 a. m.	.....	.....	S.	Clear.....	Mean minimum
4	3.10 p. m.	3.45 p. m.	.09	.....	W.	Cloudy.....	temperature, 49.4.
5	.....	.....	.....	.....	N. W.	Clear.....	Mean temp're, 59.3.
6	.....	.....	.....	.....	S. E.	Clear.....	Maximum temper-
7	6.45 a. m.	11 a. m.	.28	.....	S. E.	Cloudy.....	at're, 91; date, 1st.
8	.....	.....	.....	.....	W.	Clear.....	Minimum t mpera-
9	5 p. m.	Night.	.66	.....	S. E.	Clear.....	ture, 35; date, 6th.
10	.....	.....	.....	.....	N. W.	Clear.....	Total precipita-
11	.....	.....	.....	.....	S.	Clear.....	tion, 5.74 inches.
12	.....	.....	.....	.....	S. E.	Clear.....	Greatest precipi-
13	11 a. m.	Night.	.47	.....	S. E.	Cloudy.....	tation in 24 hours,
14	.....	.....	.....	.....	N. W.	Clear.....	1.37, date, 26th-27th
15	.....	.....	.....	.....	N. W.	Clear.....	Number of days
16	.....	.....	.....	.....	N. W.	Clear.....	with .01 in. or more
17	.....	.....	.....	.....	S. E.	Clear.....	precipitation, 14;
18	Night.	.....	.....	.....	S. E.	Part cloudy..	clear, 16; partly
19	.....	11 a. m.	.38	.....	E.	Cloudy.....	cloudy, 2; cloudy,
20	Night.	.....	.03	.....	E.	Cloudy.....	12.
21	.....	.....	.....	.....	E.	Cloudy.....	A slight frost on
22	.....	.....	.....	.....	S. E.	Cloudy.....	the 6th and 15th.
23	.....	.....	.....	.....	S.	Clear.....	The last rainfall
24	.....	.....	.....	.....	N. W.	Clear.....	(1.90 on the 26-
25	Night.	.....	.01	.....	N.	Part cloudy..	Oct. 1st) was
26	6 p. m.	.....	.....	.....	E.	Cloudy.....	measured on Oct.
27	.....	Night.	1.37	.....	N. E.	Cloudy.....	1st, 8 a. m., still
28	Night.	.....	.....	.....	N. E.	Cloudy.....	raining, so the to-
29	.....	.....	.....	.....	N. E.	Cloudy.....	tal rainfall for
30	.....	8 a. m.	1.90	.....	E.	Cloudy.....	Sept. is in excess.
Sum.	.....	.....	5.74	.....	.....	.....	.....

* Including rain, hail, sleet, and melted snow.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

October, 1902.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	64	29.450	64	29.820	58	59	58	58	66	56	....	59
2	65	29.674	70	29.750	60	63	59	62	75	55	....	63
3	66	29.818	66	29.750	56	55	52	50	70	52	....	55
4	65	29.800	62	29.732	54	48	48	45	61	46	....	48
5	68	29.778	64	29.634	49	55	48	55	60	40	....	55
6	61	29.324	67	29.386	65	60	64	54	75	60	....	60
7	65	29.662	66	29.520	52	57	49	54	72	44	....	57
8	65	29.600	61	29.800	52	48	45	44	60	33	....	48
9	55	29.720	52	29.956	48	44	46	39	61	32	....	44
10	56	30.100	62	29.942	40	43	36	39	58	32	....	43
11	58	29.788	63	29.600	40	56	38	56	60	31	....	56
12	60	29.376	62	29.528	55	56	55	54	62	54	....	56
13	62	29.740	66	29.560	50	62	49	62	65	43	....	62
14	65	29.500	66	29.608	57	47	50	42	64	47	....	47
15	63	29.754	70	29.650	41	49	38	45	65	30	....	49
16	62	29.666	66	29.812	47	50	44	43	63	41	....	50
17	63	30.022	61	30.032	39	37	36	35	51	32	....	37
18	55	30.068	60	29.936	36	52	35	50	52	28	....	52
19	.....	29.810	68	29.668	63	63	60	60	75	52	....	63
20	70	29.720	68	29.700	53	53	42	43	64	52	....	53
21	63	29.868	69	30.000	42	40	37	32	54	34	....	40
22	60	30.038	70	29.870	40	46	34	42	54	24	....	46
23	62	29.800	71	30.050	45	38	44	35	54	38	....	38
24	64	30.100	71	29.758	32	51	31	51	53	26	....	51
25	70	29.614	61	30.060	60	40	51	36	61	35	....	40
26	58	30.248	55	30.086	33	40	29	37	42	39	....	40
27	55	29.800	70	29.650	45	60	45	58	61	45	....	60
28	66	29.236	73	29.166	59	50	59	44	61	49	....	50
29	64	29.450	65	29.688	41	37	35	32	57	24	....	37
30	58	30.128	66	30.100	35	43	30	40	48	30	....	43
31	62	29.968	66	30.106	40	39	38	35	56	27	....	39
Sum...	.....	.....	.....	.....	1487	1541	1385	1432	1880	1231	.....	.....
Mean..	.....	.....	.....	.....	48.0	49.7	44.7	46.2	60.6	39.7	.....	.....

RECORD, OCTOBER, 1902.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

October, 1902.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	Amount.*	snow fall in inches.			
1	.....	Night	.17	.....	E.	Cloudy.....	Mean maximum
2	.....				W.	Part cloudy..	temperature, 60.6.
3	.....				N. W.	Clear.....	Mean minimum
4	.....				N. W.	Clear.....	temperature, 39.7.
5	1.30 p. m.	Night	1.73	.....	S. E.	Cloudy.....	Meantemperature,
6	.....				W.	Part cloudy..	50.1.
7	.....				S. W.	Clear.....	Maximum temper-
8	Night		.01	.....	W.	Clear.....	ature, 75; date, 2d,
9	.....				N. W.	Clear.....	6th, and 19th.
10	.....				N. W.	Clear.....	Minimum temper-
11	7.30 p. m.				S. W.	Clear.....	ature, 24; date,
12	.....	11 a. m.	.43	.....	N. E.	Cloudy.....	22d and 29th.
13	Night		†	.....	S.	Part cloudy..	Total precipita-
14	.....				N. W.	Clear.....	tion, 4.61 inches.
15	.....				W.	Clear.....	Greatest in 24
16	.....				N. W.	Part cloudy..	hours, 2.07; date,
17	.....				N. W.	Clear.....	27th-28th.
18	Night		†	.....	S. E.	Cloudy.....	Number of days
19	Shower		.02	.....	S. W.	Part cloudy..	with .01 inch or
20	.....				W.	Clear.....	more precipita-
21	.....				N. W.	Clear.....	tion, 8; clear, 16;
22	Night		.15	.....	S. W.	Clear.....	partly cloudy, 7;
23	.....				E.	Cloudy.....	cloudy, 8.
24	7.30 p. m.	Night	.03	.....	S. W.	Part cloudy..	Dates of killing
25	.....				N. W.	Clear.....	frost, 9th, 10th,
26	Night		†	.....	S. E.	Cloudy.....	11th, 17th, and 18th.
27	Night				S. E.	Cloudy.....	
28	.....	2 p. m.	2.07	.....	S. E.	Cloudy.....	
29	Snow squall		†	.....	N. W.	Part cloudy..	
30	Night		†	.....	N. W.	Clear.....	
31	.....				N. W.	Clear.....	
Sum.	.....	.....	4.61	.....		

* Including rain, hail, sleet, and melted snow.

† Trace.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

November, 1902.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached thermometer.	Barometer.	Attached thermometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	61	30.176	64	30.126	38	37	37	36	54	32	....	37
2	59	30.050	61	29.932	34	41	32	44	62	26	....	44
3	55	29.890	66	29.850	32	47	32	47	48	28	....	47
4	61	29.950	60	29.930	39	42	39	42	59	32	....	42
5	55	29.950	63	29.900	36	44	36	44	52	34	....	44
6	60	29.800	71	29.650	47	55	46	55	55	38	....	55
7	65	29.700	70	29.932	48	39	46	34	56	38	....	39
8	60	30.050	63	30.032	31	31	....	29	45	24	....	31
9	68	30.034	67	29.814	33	40	32	37	46	29	....	40
10	76	29.882	75	29.833	33	42	32	37	63	26	....	42
11	70	30.080	71	30.060	30	36	30	34	46	25	....	36
12	65	29.680	70	29.649	40	56	39	54	59	34	....	56
13	51	30.084	66	30.050	28	34	28	33	58	28	....	34
14	62	29.864	70	29.850	35	54	35	52	68	30	....	54
15	64	29.785	70	29.712	45	57	45	55	67	45	....	57
16	65	29.864	66	29.950	46	45	43	42	58	42	....	45
17	60	30.038	74	30.074	38	35	37	40	47	34	....	35
18	58	30.030	71	30.000	35	39	35	40	42	34	....	39
19	59	29.900	75	29.900	40	41	39	41	50	38	....	41
20	70	30.000	71	29.900	32	38	31	38	55	29	....	38
21	59	29.710	75	29.628	28	48	....	46	56	25	....	48
22	70	29.490	68	29.066	47	59	45	57	63	43	....	59
23	58	29.000	62	29.524	36	30	30	25	61	21	....	30
24	54	29.316	72	29.328	37	47	34	42	53	25	....	47
25	76	29.484	69	29.680	42	40	35	36	50	28	....	40
26	48	29.600	61	29.367	29	30	....	....	46	26	....	30
27	62	29.414	52	29.129	32	35	....	35	35	29	....	35
28	56	29.212	59	29.692	36	27	33	....	37	27	....	27
29	52	30.080	67	30.074	26	33	....	31	45	24	....	33
30	60	29.852	55	29.754	38	41	36	35	47	31	....	41
Sum...	.....	.....	.....	.....	1091	1246	907	1141	1583	925	....	1246
Mean..	.....	.....	.....	.....	36.4	41.5	36.3	40.8	52.7	30.8	....	41.5

RECORD, NOVEMBER, 1902.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

November, 1902.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	Amount.*	Snowfall in inches.			
1	.....	.....	.....	.....	S. W.	Clear	Temperature:
2	.....	.....	.....	.....	S. W.	Clear	Mean maxim., 51.7.
3	.....	.....	.....	.....	S. E.	Part cloudy..	Mean minim., 30.8.
4	.....	.....	.....	.....	S. E.	Part cloudy..	Mean, 41.8.
5	.....	.....	.....	.....	S. E.	Part cloudy..	Maximum, 68; date,
6	9 a. m.	.....	.....	.....	S. E.	Cloudy	14th.
7	.....	Night.	.05	.....	N. W.	Clear	Minimum, 21; date,
8	.....	.....	.....	.....	S. E.	Clear	23d.
9	.....	.....	.....	.....	N. E.	Clear	Precipitation:
10	.....	.....	.....	.....	N. W.	Clear	Total, .79 inches.
11	Night.	.....	.08	.....	N. W.	Clear	Greatest in 24 hrs.,
12	Night.	.....	.....	.....	S. W.	Part cloudy..	.20; date 26th-27th.
13	.....	Night.	.18	.....	E.	Cloudy	Total snowfall, .75
14	.....	.....	.....	.....	E.	Part cloudy..	inches.
15	.....	.....	.....	.....	S. W.	Part cloudy..	No. of days with
16	.....	.....	.....	.....	N. W.	Clear .....	.01 inch or more
17	.....	.....	.....	.....	N. E.	Clear	precipitation, 7;
18	.....	.....	.....	.....	N. E.	Cloudy	clear, 16; partly
19	Night.	11 a. m.	.08	.....	N. E.	Cloudy	cloudy, 6; cloudy,
20	.....	.....	.....	.....	N. E.	Clear	8.
21	.....	.....	.....	.....	N.	Clear	Date of hail, 26th.
22	Night.	.....	.01	.....	S. W.	Cloudy .....	.....
23	.....	.....	.....	.....	N. W.	Clear .....	.....
24	.....	.....	.....	.....	S. W.	Clear .....	.....
25	.....	.....	.....	.....	N. W.	Clear .....	.....
26	Night.	.....	.....	.....	N. E.	Cloudy .....	.....
27	.....	Night.	.20	.....	N. E.	Cloudy .....	.....
28	.....	.....	.....	.....	N. W.	Clear .....	.....
29	.....	.....	.....	.....	N. W.	Clear .....	.....
30	Night.	.....	.19	¾	S. W.	Cloudy .....	.....
Sum.	.....	.....	.79	.....	.....	.....	.....

* Including rain, hail, sleet, and melted snow.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

December, 1902.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	57	29.600	68	29.620	29	32	.....	.....	43	27	....	32
2	60	29.592	66	29.674	29	34	.....	33	47	29	....	34
3	53	29.478	73	29.330	38	33	38	33	43	32	....	33
4	68	29.592	72	29.668	35	30	31	.....	44	29	....	30
5	55	29.352	60	29.460	20	16	.....	.....	38	16	....	16
6	50	29.834	55	30.036	10	14	.....	.....	20	5	....	14
7	65	30.040	71	29.626	8	13	.....	.....	17	0	....	13
8	70	29.582	62	29.700	15	0	.....	.....	30	0	....	0
9	57	29.900	51	30.038	-11	-3	.....	.....	3	-22	....	-3
10	57	29.960	67	29.550	-2	31	.....	.....	32	-5	....	31
11	69	29.912	65	29.964	20	16	.....	.....	40	16	....	16
12	56	29.950	67	30.140	13	11	.....	.....	29	10	....	11
13	57	29.764	46	29.880	6	7	.....	.....	15	5	....	7
14	55	30.038	61	30.220	12	11	.....	.....	19	9	....	11
15	64	30.384	62	30.390	10	17	.....	.....	27	7	....	17
16	63	30.100	70	29.564	24	49	.....	.....	49	3	....	49
17	66	29.420	69	29.474	35	30	.....	.....	50	29	....	30
18	61	29.370	67	29.484	29	31	.....	.....	43	28	....	31
19	57	29.568	66	29.584	25	39	.....	.....	43	23	....	39
20	56	29.950	69	30.054	24	25	.....	.....	38	25	....	25
21	55	30.250	62	29.840	22	38	.....	.....	38	27	....	38
22	63	29.500	68	29.608	42	39	.....	.....	53	38	....	39
23	51	29.702	55	29.938	26	17	.....	.....	45	17	....	17
24	54	29.756	64	29.512	8	19	.....	.....	29	7	....	19
25	42	29.740	46	29.584	18	23	.....	.....	23	13	....	23
26	39	29.382	64	29.501	24	27	.....	.....	30	21	....	27
27	58	29.412	66	29.504	25	19	.....	.....	32	19	....	19
28	59	29.614	60	29.734	12	19	.....	.....	24	5	....	19
29	66	29.942	68	29.726	11	35	.....	.....	35	10	....	35
30	60	29.750	73	29.880	30	27	.....	.....	38	26	....	27
31	61	29.836	73	29.930	21	28	.....	.....	40	18	....	28
Sum...	.....	.....	.....	.....	608	727	.....	.....	1057	494	....	727
Mean...	.....	.....	.....	.....	19.6	23.5	....	.....	34.1	15.9	....	.....

RECORD, DECEMBER, 1902.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

December, 1902.	PRECIPITATION.				Preval- ling wind direction.	Character of day.	Remarks.
	Time of begin- ning.	Time of ending.	*Amount.	Snowfall in inches.			
1					W.	Part cloudy..	Temperature:
2	9 p. m.				W.	Part cloudy..	Mean maximum, 33.
3		Night.	.40		N. E.	Cloudy	Mean minimum, 16.
4	Night.				N. W.	Clear	Mean, 25.
5		7 p. m.	.75	6	N. E.	Cloudy	Maximum, 53; date,
6					N. W.	Clear	22d.
7	8 a. m.	6 p. m.	.16	3	N. E.	Cloudy	Minimum, -22;
8					N. W.	Part cloudy..	date, 9th.
9					N. W.	Clear	
10	7.30 a. m.	4 p. m.	.68	2	S. W.	Cloudy	Precipitation:
11	Night.				N. W.	Part cloudy..	Total, 5.87 inches;
12		10 a. m.	.04	1	N. E.	Part cloudy..	greatest in 24
13	9 a. m.	Night.	.19	4	N.	Cloudy	hours, 1.84; date,
14					N. E.	Part cloudy..	15th-16th.
15	Night.				N. W.	Clear	Total snowfall, 22
16		Night.	1.84		S. SW.	Cloudy	inches.
17					W.	Clear	
18					W.	Clear	Number of days
19					N. W.	Clear	with .01 inch or
20					N. W.	Clear	more precipita-
21	11 a. m.	Night.	1.54		N. E.	Cloudy	tion, 15; clear, 14;
22					W.	Clear	partly cloudy, 7;
23					N. W.	Clear	cloudy, 10.
24					N. W.	Clear	
25	5 p. m.				N. E.	Cloudy	
26		6 a. m.	.72	6	N. E.	Cloudy	
27					S. W.	Part cloudy..	
28					W.	Clear	
29	4 p. m.	Night.	.15		S. W.	Cloudy	
30					N. W.	Clear	
31					W.	Clear	
Sum.			5.87	22			

* Including rain, hail, sleet, and melted snow.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

January, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	75	29.802	78	29.820	22	37	.....	.....	49	18	....	37
2	63	29.900	76	29.872	31	35	.....	.....	46	30	....	35
3	64	29.400	.....	.....	38	34	.....	.....	36	31	....	34
4	.....	.....	52	29.284	34	35	.....	.....	41	34	....	35
5	47	29.392	68	29.556	28	30	.....	.....	37	27	....	30
6	55	29.380	73	29.172	28	30	.....	.....	37	26	....	30
7	62	29.326	68	29.068	12	26	.....	.....	35	12	....	26
8	61	28.904	69	29.082	17	16	.....	.....	30	15	....	16
9	50	29.250	64	29.330	2	4	.....	.....	11	2	....	4
10	65	29.592	61	29.760	-3	17	.....	.....	23	-3	....	17
11	60	29.872	62	29.072	8	32	.....	.....	34	5	....	32
12	61	29.194	67	29.450	24	16	.....	.....	34	16	....	16
13	65	29.664	66	29.800	9	15	.....	.....	19	5	....	15
14	67	29.912	68	29.800	8	14	.....	.....	23	3	....	14
15	66	29.516	68	29.500	22	30	.....	.....	33	13	....	30
16	53	29.550	69	29.668	28	32	.....	.....	37	28	....	32
17	61	29.324	68	29.200	29	38	.....	.....	46	28	....	38
18	47	29.432	50	29.866	15	0	.....	.....	38	0	....	0
19	53	30.114	59	30.228	-8	2	.....	.....	7	-8	....	2
20	59	30.300	66	30.180	-10	20	.....	.....	25	-11	....	20
21	69	29.636	70	29.248	38	40	.....	.....	42	17	....	40
22	68	29.578	74	29.678	29	30	.....	.....	43	27	....	30
23	60	29.574	62	29.900	26	9	.....	.....	43	9	....	9
24	62	30.150	67	30.150	1	11	.....	.....	17	0	....	11
25	52	30.068	60	30.034	30	11	.....	.....	23	8	....	11
26	62	30.120	72	30.178	14	17	.....	.....	28	10	....	17
27	69	30.072	75	29.900	19	30	.....	.....	41	6	....	30
28	78	29.800	71	29.700	30	32	.....	.....	36	26	....	32
29	67	29.776	68	29.616	26	34	.....	.....	34	24	....	34
30	63	29.100	62	29.136	36	30	.....	.....	42	30	....	30
31	58	29.328	62	29.564	27	25	.....	.....	37	25	....	25
Sum...	.....	.....	.....	.....	610	732	.....	.....	1007	473	....	732
Mean..	.....	.....	.....	.....	19.7	23.6	.....	.....	32.5	15.2	....	23.6

RECORD, JANUARY, 1903.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

January, 1903.	PRECIPITATION.				prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	Amount.*	Snowfall in inches.			
1	S. W.	Clear.....	Temperature:
2	W.	Clear.....	Mean maximum,
3	W.	Clear.....	32.5; mean mini-
4	W.	Cloudy.....	mum, 15.2; mean,
5	N. W.	Clear.....	23.9; maximum, 49;
6	9 a. m.	.....	.....	.....	N. E.	Cloudy.....	date, 1st; mini-
7	Night	2.0	3.	N. E.	Cloudy.....	mum, -11; date,
8	Night	.16	3.	E.	Cloudy.....	20th.
9	N. W.	Clear.....	
10	N. W.	Clear.....	Precipitation:
11	10 a. m.	Night	.53	4.	N. E.	Cloudy.....	Total, 6.05 inches;
12	N. W.	Clear.....	greatest in 24
13	N. W.	Clear.....	hours, 2 inches;
14	N. W.	Clear.....	date, 6th and 7th.
15	W.	Part cloudy..	Total snowfall, 12
16	W.	Part cloudy..	inches; on ground
17	N. W.	Part cloudy..	15th, 5 inches.
18	N. W.	Clear.....	
19	N. W.	Clear.....	No. of days with .01
20	Night	.....	.....	.....	N. W.	Clear.....	inch or more pre-
21	2 p. m.	1.85	.....	N. E. W.	Cloudy.....	cipitation, 10;
22	N. W.	Clear.....	clear, 15; partly
23	N. W.	Part cloudy..	cloudy, 6; cloudy,
24	N. W.	Part cloudy..	10.
25	6 a. m.	4 p. m.	.11	2.	N. E.	Cloudy.....	
26	N. W.	Clear.....	The storms of 6th,
27	S. W.	Part cloudy..	7th, and 11th, were
28	8 a. m.	.....	.....	.....	E.	Cloudy.....	snow first and
29	N. E.	Cloudy.....	then rain.
30	11 a. m.	1.40	.....	S. W.	Cloudy.....	
31	N. E.	Clear.....	
Sum.	6.05	12			
.....			

*Including rain, hail, sleet, and melted snow.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

February, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	s a. m.	s p. m.	s a. m., wet.	s p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	44	29.832	48	29.736	22	30	.....	.....	35	26	....	30
2	50	29.700	61	29.650	30	31	.....	.....	36	30	....	31
3	57	29.600	70	29.822	34	32	.....	.....	46	30	....	32
4	55	29.436	67	28.920	34	32	.....	.....	36	30	....	32
5	60	29.500	65	29.621	23	20	.....	.....	34	20	....	20
6	62	29.694	64	29.798	22	23	.....	.....	34	17	....	23
7	67	29.908	68	30.038	20	19	.....	.....	34	15	....	19
8	67	29.068	62	29.142	12	34	.....	.....	34	6	....	34
9	69	29.282	66	29.630	21	25	.....	.....	42	20	....	25
10	71	29.868	72	29.834	24	34	.....	.....	39	22	....	34
11	58	29.726	72	29.400	26	38	.....	.....	44	24	....	38
12	67	29.072	75	29.564	41	40	.....	.....	47	34	....	40
13	65	29.688	76	29.764	36	39	.....	.....	45	33	....	39
14	58	29.870	66	29.951	22	20	.....	.....	48	19	....	20
15	71	29.910	68	29.660	22	29	.....	.....	33	16	....	29
16	53	29.388	63	29.350	25	22	.....	.....	30	21	....	22
17	38	28.820	52	29.334	14	8	.....	.....	30	8	....	8
18	55	29.700	68	29.701	-3	4	.....	.....	13	-7	....	4
19	69	29.983	62	30.050	2	1	.....	.....	7	0	....	1
20	60	30.120	63	30.154	-1	10	.....	.....	24	-6	....	10
21	61	30.210	65	29.844	11	29	.....	.....	34	14	....	29
22	73	29.780	58	30.502	26	23	.....	.....	31	19	....	23
23	50	30.016	75	30.000	16	36	.....	.....	43	12	....	36
24	62	29.942	80	29.832	31	33	.....	.....	38	30	....	33
25	66	29.842	78	30.021	24	28	.....	.....	37	18	....	28
26	68	30.032	82	30.031	24	37	.....	.....	45	19	....	37
27	69	30.031	84	29.942	33	46	.....	.....	56	28	....	46
28	76	29.370	66	29.264	47	47	.....	.....	60	37	....	47
Sum...	.....	.....	.....	.....	638	770	.....	.....	1035	535	.....	770
Mean..	.....	.....	.....	.....	22.8	27.5	.....	.....	37.0	19.2	.....	27.5

RECORD, FEBRUARY, 1903.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

February, 1903.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1	N. W.	Part cloudy..	Temperature: Mean maximum, 37.0; mean minimum, 19.2; mean, 28.1; maximum temperature, 60; date, 28th; minimum temperature, -7; date, 18th.
2	6 p. m.	Night	.11	†	N. E.	Part cloudy..	
3	Night	.....	.....	.....	W.	Clear.....
4	.....	Night	.94	.....	N. E.	Cloudy.....
5	W.	Part cloudy..	Precipitation: Total 4.32 inches; greatest in 24 hours, .94 inches; date, 3d-4th.
6	.....	.....	.....	.....	N. W.	Clear.....
7	.....	.....	.....	.....	N. W.	Clear.....
8	10 a. m.	Night	.81	3	N. E.	Cloudy.....	
9	N. W.	Clear.....	No. of days with .01 inch or more precipitation, 10; clear, 12; partly cloudy 9; cloudy 7.
10	.....	.....	.....	.....	W.	Part cloudy..
11	4 p. m.	Night	.37	.....	S.	Cloudy.....
12	.....	.....	.....	.....	NW. W.	Part cloudy..
13	N. W.	Part cloudy..	
14	.....	.....	.....	.....	N. W.	Part cloudy..
15	Night	.....	.....	.....	S. W.	Cloudy.....
16	.....	.....	.....	.....	N. E.	Cloudy.....
17	4 p. m.	1.17	9	NE. NW	Cloudy.....	
18	.....	.....	.....	.....	N. W.	Part cloudy..
19	.....	.....	.....	.....	N. W.	Clear.....
20	.....	.....	.....	.....	N. W.	Clear.....
21	S.	Clear.....	
22	.....	.....	.....	.....	N. W.	Clear.....
23	.....	.....	.....	.....	N. W.	Clear.....
24	.....	.....	.....	.....	S. SW.	Clear.....
25	N. W.	Clear.....	
26	.....	.....	.....	.....	NW. W.	Clear.....
27	Night	.....	.....	.....	S. W.	Part cloudy..
28	.....	4 p. m.	.92	.....	S. W.	Cloudy.....
Sum.	4.32	12	

*Including rain, hail, sleet, and melted snow.

† Trace.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

March, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	63	29.443	68	29.846	43	26	.....	.....	51	25	....	26
2	67	30.042	71	30.128	22	32	.....	.....	37	17	....	32
3	71	30.434	69	30.300	22	22	.....	.....	36	18	....	22
4	58	30.132	76	30.054	31	41	.....	.....	51	24	....	41
5	67	29.980	67	29.774	34	35	.....	.....	45	30	....	35
6	66	29.982	72	30.200	36	33	.....	.....	43	33	....	33
7	60	30.284	64	30.210	28	36	.....	.....	43	22	....	36
8	55	29.988	66	29.828	39	48	.....	.....	53	35	....	48
9	62	30.148	69	30.190	42	40	.....	.....	49	40	....	40
10	82	30.200	79	30.174	35	41	.....	.....	45	33	....	41
11	72	29.936	78	29.972	40	43	.....	.....	50	38	....	43
12	65	30.012	80	29.956	37	42	.....	.....	58	30	....	42
13	62	29.900	76	29.920	35	40	.....	.....	63	28	....	40
14	66	29.910	72	29.876	36	55	.....	.....	72	28	....	55
15	45	30.028	63	30.154	40	34	.....	.....	56	33	....	34
16	49	30.200	73	30.162	32	33	.....	.....	38	30	....	33
17	66	29.900	78	29.942	35	43	.....	.....	49	32	....	43
18	70	30.150	71	30.200	42	38	.....	.....	46	38	....	38
19	81	30.079	76	29.900	41	62	.....	.....	73	36	....	62
20	71	29.802	71	29.804	55	46	.....	.....	78	45	....	46
21	54	29.873	66	29.852	37	40	.....	.....	48	36	....	40
22	69	29.861	76	30.010	45	45	.....	.....	53	38	....	45
23	58	30.018	61	29.672	39	43	.....	.....	47	38	....	43
24	62	29.942	62	29.676	42	40	.....	.....	50	40	....	40
25	61	29.580	63	29.528	41	37	.....	.....	47	35	....	37
26	62	29.674	65	29.728	38	45	.....	.....	53	31	....	45
27	62	29.612	64	29.764	62	49	.....	.....	63	37	....	49
28	58	29.832	50	29.818	36	32	.....	.....	57	32	....	32
29	57	30.154	57	30.186	21	32	.....	.....	41	20	....	32
30	56	30.100	66	29.814	32	36	.....	.....	44	18	....	36
31	79	29.220	65	29.316	37	46	.....	.....	56	28	....	46
Sum ...	.....	.....	.....	.....	1155	1235	.....	.....	1595	968	....	1235
Mean ..	.....	.....	.....	.....	37.3	39.8	.....	.....	51.4	31.2	....	39.8

RECORD, MARCH, 1903.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

March, 1903.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1	.....	.....	.....	.....	N. W.	Part cloudy..	Temperature:
2	.....	.....	.....	.....	W.	Part cloudy..	Mean maximum,
3	.....	.....	.....	.....	N. E.	Cloudy	51.4.
4	.....	.....	.....	.....	N. W.	Part cloudy..	Mean minimum,
5	11 a. m.	Night.	.37	.....	N. E.	Cloudy	31.2.
6	.....	.....	.....	.....	N. W.	Clear	Mean, 41.3.
7	10 p. m.	.....	.....	.....	S.	Clear	Maximum, 78;
8	.....	.....	.....	.....	S. E.	Cloudy	date, 20th.
9	.....	Night.	2.00	.....	E.	Cloudy	Minimum, 17;
10	8 p. m.	.....	.....	.....	N. E.	Cloudy	date, 2d.
11	.....	10 a. m.	1.14	.....	SW. NW.	Cloudy .....	.....
12	.....	.....	.....	.....	W.	Clear	Precipitation:
13	.....	.....	.....	.....	Calm.	Clear	Total, 6.63 inches.
14	.....	.....	.....	.....	N. W.	Clear	Greatest in 24
15	Night.	.....	.....	.....	S. E.	Clear	hrs., 1.63 inches;
16	.....	10 a. m.	.08	.....	E.	Cloudy	date, 24th.
17	Shower.	.....	†	.....	S. W.	Cloudy	Total snowfall,
18	.....	.....	.....	.....	S. E.	Cloudy	1 inch.
19	.....	.....	.....	.....	S. W.	Clear .....	.....
20	.....	.....	.....	.....	S. W.	Clear	No. of days with
21	3 p. m.	.....	.....	.....	N. E.	Cloudy .....	.01 inch or more
22	.....	.....	.....	.....	N. E.	Cloudy	precipitation, 14;
23	.....	Night.	1.63	.....	N. E.	Cloudy	clear, 9; partly
24	4 p. m.	Night.	.39	.....	SE. E.	Cloudy	cloudy, 8; cloudy,
25	.....	.....	.....	.....	W.	Part cloudy..	14.
26	.....	.....	.....	.....	N. W.	Clear .....	.....
27	Night.	.....	.....	.....	N. W.	Part cloudy..	.....
28	.....	Night.	.47	1	N.	Cloudy .....	.....
29	.....	.....	.....	.....	N. W.	Part cloudy..	.....
30	9 p. m.	.....	.....	.....	S. E.	Part cloudy..	.....
31	.....	8 a. m.	.55	.....	N. W.	Part cloudy..	.....
Sum.	.....	.....	6.63	1	.....	.....	.....
.....

* Including rain, hail, sleet, and melted snow.

† Trace.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT 43° 8' N.

April, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	60	29.524	63	29.784	47	40	40	34	53	38	....	40
2	65	29.960	60	29.758	39	43	35	40	47	27	....	43
3	56	29.356	66	29.150	55	58	53	55	67	40	....	58
4	64	29.100	60	29.410	57	27	57	.....	60	27	....	27
5	52	29.760	47	30.010	25	28	.....	.....	38	22	....	28
6	64	30.050	58	30.064	30	36	.....	.....	44	18	....	36
7	52	29.866	68	29.638	39	51	38	51	51	32	....	51
8	68	29.682	69	29.486	48	43	46	43	58	42	....	43
9	69	29.560	70	29.550	48	48	44	44	61	42	....	48
10	61	29.650	65	29.750	49	50	45	42	59	42	....	50
11	62	29.814	70	29.793	44	42	36	35	53	38	....	42
12	76	29.662	70	29.600	39	41	.....	40	59	27	....	41
13	72	29.686	71	29.760	42	42	36	40	51	30	....	42
14	69	29.794	65	29.728	37	42	37	39	47	36	....	42
15	56	29.616	54	29.500	36	40	36	40	45	37	....	40
16	51	29.440	60	29.424	34	38	34	38	43	32	....	38
17	54	29.344	55	29.380	40	40	35	36	46	35	....	40
18	57	29.364	60	29.392	41	37	37	32	56	28	....	37
19	53	29.402	70	29.444	40	45	36	38	56	28	....	45
20	70	29.446	67	29.428	45	45	35	40	58	29	....	45
21	62	29.400	66	29.450	44	42	35	40	56	29	....	42
22	58	29.500	71	29.566	47	42	40	41	54	36	....	42
23	71	29.630	68	29.650	52	47	46	45	58	40	....	47
24	59	29.760	66	29.624	45	46	44	45	58	40	....	46
25	65	29.684	67	29.573	47	48	39	44	59	28	....	48
26	68	29.863	63	29.808	47	42	.....	42	53	31	....	42
27	64	29.850	64	29.900	47	46	42	40	61	32	....	46
28	64	29.934	70	29.800	58	57	50	50	73	31	....	57
29	68	29.732	73	29.722	66	70	48	57	80	42	....	70
30	73	29.744	72	29.482	60	65	53	57	77	50	....	65
Sum...	.....	.....	.....	.....	1348	1341	1077	1148	1681	1009	....	1341
Mean..	.....	.....	.....	.....	44.9	44.7	41.4	42.5	56.0	33.6	....	44.7

RECORD, APRIL, 1903.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

April, 1903.	PRECIPITATION.				prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1					N. W.	Clear	Temperature:
2	Night.				S. E.	Part cloudy..	Mean maximum,
3		11 a. m.	.27		S. W.	Cloudy	56.
4	Shower.		.30		N. W.	Cloudy	Mean minimum,
5					N. W.	Part cloudy..	33 6.
6					S. W.	Part cloudy..	Mean, 44.8.
7	8 a. m.	Night.	.35		S. W.	Cloudy	Maximum, 80;
8	10 a. m.	Night.	.70		SW. NE.	Cloudy	date, 29th.
9					NW. S.	Part cloudy..	Minimum, 18;
10					N. W.	Part cloudy..	date, 6th.
11					N.	Part cloudy..	
12					E.	Clear	Precipitation:
13					S. W.	Part cloudy..	Total, 2.34 inches;
14	Show er.		.02		E.	Part cloudy..	greatest in 24
15	7 a. m.				E.	Cloudy	hours, 70; date,
16		Night.	.70		E.	Cloudy	8th.
17					N.	Part cloudy..	
18					N.	Part cloudy..	Number of days
19					N. W.	Clear	with .01 inch or
20					N. W.	Clear	more precipita-
21					S. E.	Clear	tion, 8; clear, 11;
22					S. E.	Part cloudy..	partly cloudy,
23					S. E.	Part cloudy..	13; cloudy, 6.
24					S. E.	Part cloudy..	
25					N.	Clear	
26					S. E.	Clear	
27					S. E.	Clear	
28					S.	Clear	
29					N. W.	Clear	
30					S. W.	Clear	
Sum.			2.34				

* Including rain, hail, sleet, and melted snow.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

May, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set Maximum.
1	68	29.600	65	30.064	50	40	42	32	68	40	....	40
2	62	30.262	59	30.152	38	36	31	35	49	25	....	36
3	51	30.532	68	29.962	44	43	41	42	47	28	....	43
4	56	29.946	67	29.922	42	48	42	47	56	41	....	48
5	55	29.920	63	29.900	49	49	42	49	59	45	....	49
6	61	29.878	61	29.820	50	49	48	48	58	47	....	49
7	68	29.780	66	29.772	52	53	50	49	61	35	....	53
8	67	29.854	71	29.844	60	57	52	54	73	42	....	57
9	70	29.972	66	29.534	61	46	49	44	60	42	....	46
10	60	30.021	71	29.968	56	59	51	55	79	33	....	59
11	70	30.050	70	30.050	61	55	53	47	79	40	....	55
12	66	30.100	70	30.100	55	51	50	49	74	35	....	51
13	63	30.050	69	29.850	48	60	48	57	74	34	....	60
14	68	29.824	59	29.700	59	50	53	49	64	50	....	50
15	61	29.650	69	29.771	57	59	54	52	75	46	....	59
16	52	29.963	60	29.974	47	45	44	41	60	44	....	45
17	63	29.880	74	29.762	64	71	64	61	87	43	....	71
18	75	29.724	78	29.700	66	74	60	65	90	56	....	74
19	73	29.679	80	29.636	66	71	59	67	88	56	....	71
20	71	29.586	74	29.594	65	58	61	57	78	52	....	58
21	74	29.614	75	29.605	72	66	61	59	84	53	....	66
22	76	29.526	73	29.621	74	63	64	58	78	61	....	63
23	65	29.708	61	29.800	56	49	48	43	64	47	....	49
24	60	29.900	62	29.857	52	49	40	47	62	30	....	49
25	58	29.972	61	30.024	58	51	46	48	64	31	....	51
26	62	30.079	65	30.046	57	52	50	47	68	33	....	52
27	65	29.509	68	29.862	63	65	57	61	74	40	....	65
28	72	29.800	71	29.734	74	67	65	65	77	59	....	67
29	71	29.834	73	29.820	63	65	52	58	77	57	....	65
30	65	29.850	68	29.824	48	55	48	45	68	45	....	55
31	63	29.930	68	20.000	57	53	49	47	63	40	....	53
Sum...	.....	.....	.....	.....	1764	1709	1574	1578	2158	1330	....	1709
Mean..	.....	.....	.....	.....	56.9	55.1	50.8	50.9	69.6	42.9	....	55.1

RECORD, MAY, 1903.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

May, 1903.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1	.....	.....	.....	.....	N. W.	Clear	Temperature:
2	.....	.....	.....	.....	N. W.	Clear	Mean maximum,
3	Night.	.....	.....	.....	E.	Cloudy	69.6; mean mini-
4	.....	10 a. m.	.11	.....	S. E.	Cloudy	mum, 42.9; mean,
5	3 p. m.	Night.	.10	.....	N. E.	Cloudy	56.2; maximum,
6	.....	.....	.....	.....	E.	Cloudy	90; date, 18th;
7	.....	.....	.....	.....	S.	Part cloudy..	minimum, 25;
8	.....	.....	.....	.....	S.	Clear	date, 2d.
9	.....	.....	.....	.....	S.	Clear	Precipitation:
10	.....	.....	.....	.....	S.	Clear	Total, 1.07 inches;
11	.....	.....	.....	.....	S. SE.	Clear	greatest in 24
12	.....	.....	.....	.....	S.	Clear	hours, 40; date,
13	.....	.....	.....	.....	S.	Clear	29th.
14	Thunder shower.	.....	.17	.....	S.	Part cloudy..	No. of days with
15	.....	.....	.....	.....	S. SE.	Part cloudy..	.01 inch or more
16	.....	.....	.....	.....	S.	Clear	precipitation, 6;
17	.....	.....	.....	.....	S. SW.	Clear	clear, 18; partly
18	.....	.....	.....	.....	S. E.	Part cloudy..	cloudy, 7; cloudy,
19	Thunder shower.	.....	†	.....	N. W.	Part cloudy..	6.
20	Thunder shower.	.....	.09	.....	S. E.	Part cloudy..	Dates of killing
21	.....	.....	.....	.....	S. W.	Clear	frost, 24th; thun-
22	.....	.....	.....	.....	N. W.	Clear	der storms, 14th,
23	.....	.....	.....	.....	N. NW.	Clear	19th, and 20th.
24	.....	.....	.....	.....	N. W.	Clear†	Maximum and
25	.....	.....	.....	.....	S.	Clear	minimum tem-
26	.....	.....	.....	.....	S. SE.	Clear	peratures are
27	.....	.....	.....	.....	S. W.	Cloudy	read at 8 p. m.,
28	10 a. m.	Night.	.20	.....	W.	Cloudy	daily.
29	Night.	.....	.40	.....	N. W.	Part cloudy..	
30	.....	.....	.....	.....	N. W.	Clear	
31	.....	.....	.....	.....	S. E.	Clear	
Sum.	.....	.....	1.7	.....		
.....			

* Including rain, hail, sleet, and melted snow.

† Trace.

‡ Killing frost.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

June, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	65	30.032	70	29.900	62	60	51	51	74	45	....	60
2	67	30.000	69	29.900	65	59	55	51	69	49	....	59
3	67	29.700	74	29.728	69	71	52	53	84	54	....	71
4	65	29.950	62	30.006	52	51	44	47	75	45	....	51
5	60	30.088	66	30.020	51	61	48	54	71	36	....	61
6	64	29.968	71	29.886	63	65	54	57	80	45	....	65
7	70	29.863	74	29.804	66	67	61	63	78	50	....	67
8	70	29.766	71	29.690	63	62	62	61	71	60	....	62
9	70	29.686	71	29.708	64	61	63	60	71	58	....	61
10	69	29.779	71	29.772	62	62	62	61	70	59	....	62
11	68	29.754	65	29.720	62	58	61	58	62	56	....	58
12	61	29.598	65	29.570	59	59	59	59	62	55	....	59
13	61	29.472	65	29.552	58	59	58	58	63	55	....	59
14	63	29.578	65	29.548	52	55	51	54	63	49	....	55
15	61	29.416	55	29.464	56	52	54	52	60	52	....	52
16	54	29.554	59	29.596	52	53	49	51	59	47	....	53
17	59	29.632	60	29.695	56	51	53	49	57	47	....	51
18	60	29.826	60	29.714	55	55	53	54	58	48	....	55
19	60	29.664	62	29.608	55	56	53	54	62	49	....	56
20	62	29.646	61	29.624	56	54	55	53	61	52	....	54
21	55	29.529	54	29.502	51	50	51	50	54	50	....	50
22	56	29.666	62	29.775	54	52	52	49	60	48	....	52
23	58	29.750	55	29.744	49	48	49	47	52	47	....	48
24	55	29.782	54	29.792	51	48	48	48	52	46	....	48
25	54	29.743	56	29.710	52	55	51	54	57	47	....	55
26	64	29.684	73	29.652	60	67	58	61	75	52	....	67
27	74	29.640	71	29.590	69	67	63	58	77	65	....	67
28	70	29.638	75	29.616	65	63	57	59	77	45	....	63
29	65	29.656	70	29.654	59	55	57	53	61	50	....	55
30	65	29.676	64	29.568	61	58	56	58	69	52	....	58
Sum...	.....	.....	.....	.....	1749	1774	1641	1637	1984	1517	....	1774
Mean..	.....	.....	.....	.....	58.3	59.1	54.7	54.6	66.1	50.6	....	59.1

RECORD, JUNE, 1903.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

June, 1903.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1					S.	Clear	Temperature:
2					S.	Clear	Mean maximum,
3					N. W.	Clear	66.1; mean mini-
4					NE. E.	Clear	mum, 50.6; mean,
5					E.	Clear	58.3; maximum, 84;
6					S. E.	Clear	date, 3d; mini-
7					S. W.	Cloudy	mum, 36; date, 5th.
8	6 a. m.	8 p. m.	†		S.	Cloudy	
9	8 p. m.	8 a. m.	.44		S. E.	Cloudy	Precipitation:
10			†		S. E.	Cloudy	Total, 7.70 inches;
11	12 m.		†		S. E.	Cloudy	greatest in 24
12	Night		1.64		S. SE.	Cloudy	hours, 2.00 inches;
13		11 a. m.	.98		S. SE.	Cloudy	date, 20th.
14					S. E.	Cloudy	
15	6 a. m.		1.50		NE. E.	Cloudy	No. of days with .01
16		4 a. m.	.12		N. NE.	Cloudy	inch or more pre-
17					S. E.	Cloudy	cipitation, 9; clear,
18	12.30 p. m.		†		S.	Cloudy	9; partly cloudy,
19					S. SW.	Cloudy	2; cloudy, 19.
20	8 p. m.		†		S. SE.	Cloudy	
21		8 p. m.	2.00		N. E.	Cloudy	On the 3d-6th in-
22	8 p. m.	Night	.40		S. E.	Part cloudy	clusive, the sun
23			†		E.	Cloudy	appeared a dull
24	12 m.		.15		E.	Cloudy	red circle.
25			.47		E.	Cloudy	
26					N. W.	Part cloudy	
27					N. NW.	Clear	
28					S.	Clear	
29	4 p. m.	Night	†		S.	Cloudy	
30			†		S. SE.	Clear	
Sum.			7.70				

* Including rain, hail, sleet, and melted snow.

† Trace.

‡ Smoky, caused by forest fires.

METEOROLOGICAL SUMMARY.—1902-1903.

MONTHS.	Average temperature.*		Precipitation.		Snow in inches.		Number of days of .01 inch precipitation.		1902-1903.			
	July, 1, 1895, to July 1, 1903.	1902-1903.	Average, July 1, 1895, to July 1, 1903.	1902-1903.	Average, July 1, 1895, to July 1, 1903.	1902-1903.	Average, July 1, 1895, to July 1, 1903.	1902-1903.	Prevailing wind direction.	Days clear.	Days partly cloudy.	Days cloudy.
July.....	69.1	65.3	3.48	3.39	.....	.....	9	8	N. W.	11	10	10
August.....	66.5	61.4	3.17	5.81	.....	.....	8	8	NW. S.	13	11	7
September.....	59.3	58.7	4.28	5.74	.....	.....	9	14	S. E.	16	2	12
October.....	48.0	48.8	3.67	4.61	.....	.....	8	7	N. W.	16	7	8
November.....	36.8	38.9	4.02	.79	4.0	.8	9	8	N. W.	16	6	8
December.....	25.6	21.5	3.88	5.87	9.7	22.0	8	15	N. W.	14	7	10
January.....	21.0	21.6	4.05	6.05	17.8	12.0	6	10	N. W.	15	6	10
February.....	22.7	25.1	4.04	4.32	13.6	12.0	7	10	N. W.	12	9	7
March.....	32.8	38.5	5.34	6.63	10.4	1.0	10	14	N. W.	9	8	14
April.....	43.9	44.8	3.41	2.34	1.0	.....	9	8	NW. SE.	11	13	6
May.....	54.8	56.0	2.63	1.07	.....	.....	9	6	N. W.	18	7	6
June.....	63.1	58.7	3.60	7.70	.....	.....	9	9	S. E.	9	2	19
Sum.....	543.6	542.3	45.77	54.32	56.5	47.8	101	117	N. W.	160	83	117
Mean.....	45.3	45.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Average of 8 a. m. and 8 p. m. observations.

METEOROLOGICAL REPORT.

1903 -- 1904.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

July, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	66	29.562	72	29.502	66	69	66	69	75	54	....	69
2	78	29.366	79	29.490	81	75	74	67	88	66	....	75
3	75	29.629	73	29.630	71	68	61	60	79	66	....	68
4	76	29.760	69	29.832	68	63	60	60	76	57	....	63
5	75	29.900	74	29.834	71	65	65	63	80	50	....	65
6	71	29.764	74	29.754	64	68	64	67	81	61	....	68
7	75	29.810	80	29.760	74	73	67	65	84	56	....	73
8	75	29.669	80	29.608	70	71	64	68	87	65	....	71
9	81	29.616	85	29.664	81	71	71	66	90	67	....	71
10	80	29.644	87	29.520	67	81	63	75	92	58	....	81
11	88	29.524	85	29.482	81	72	73	67	89	69	....	72
12	84	29.504	85	29.480	76	73	67	69	88	63	....	73
13	80	29.488	87	29.476	71	68	66	67	74	66	....	68
14	72	29.526	75	29.532	67	61	60	59	79	60	....	61
15	73	29.490	75	29.530	65	60	60	53	75	55	....	60
16	76	29.562	77	29.723	64	64	58	59	73	51	....	64
17	77	29.840	82	29.848	69	68	60	62	81	52	....	68
18	80	29.710	77	29.658	70	65	62	61	81	53	....	65
19	64	29.430	64	29.482	59	60	59	58	60	58	....	60
20	74	29.614	73	29.688	66	64	63	62	75	54	....	64
21	66	29.688	77	29.737	60	60	60	60	65	58	....	60
22	66	29.801	67	29.753	61	61	60	61	67	58	....	61
23	60	29.601	71	29.646	62	63	62	63	73	59	....	63
24	74	29.672	79	29.726	72	68	66	61	80	58	....	68
25	77	29.744	83	29.629	71	78	62	71	88	58	....	78
26	79	29.544	75	29.540	71	68	68	60	81	67	....	68
27	65	29.572	64	29.676	56	58	50	52	68	57	....	58
28	67	29.742	73	29.744	62	63	56	59	73	52	....	63
29	70	29.696	73	29.542	65	72	62	70	72	54	....	72
30	76	29.542	82	29.504	74	76	71	73	89	69	....	76
31	81	29.636	73	29.800	73	63	65	57	76	62	....	63
Sum ...	.....	.....	.....	.....	2128	2089	1968	1964	2439	1831	....	2089
Mean ..	.....	.....	.....	.....	68.6	67.4	63.5	63.4	78.7	59.1	....	67.4

RECORD, JULY, 1903.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

July, 1903.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
138	S. SE.	Cloudy	Temperature: Mean maximum, 78.7; mean minimum, 59.1; mean, 68.9; maximum, 92; date, 10th; minimum, 50; date, 5th.
2	N. W.	Part cloudy..	
3	N. NW.	Clear	
4	S. SE.	Clear	
5	S. SE.	Cloudy	Precipitation: Total, 4.92 inches; greatest in 24 hrs., 1.42 inches; date, 21st.
631	.....	N. NW.	Part cloudy..	
7	N. W.	Clear	
8	S.	Clear	
9	NW. W.	Clear	No. of days with .01 inch or more precipitation, 8; clear, 13; partly cloudy, 8; cloudy, 10.
10	W.	Part cloudy..	
11	4.45 p. m.	.....	†	.....	N. NE.	Part cloudy..
12	N.	Part cloudy..	
13	†	NE. E.	Cloudy	Dates of thunder storms, 16th, 21st, 23d and 30th.
14	†	NW. SW.	Part cloudy..	
15	W.	Clear	
16	11.25 a. m.	11.50 p. m.	†	.....	W.	Part cloudy†
17	W.	Clear	Explosion at Lo- well on 29th rat- tled windows and doors here; dis- tance about 40 miles.
1845	.....	SW. W.	Cloudy	
19	10 p. m.	Night.	.79	.....	N. E.	Cloudy
20	S.	Cloudy	
21	1.42	S. E.	Cloudy†	
22	E.	Cloudy	
2374	.....	S. E.	Cloudy†§	
24	N. W.	Clear	
25	W.	Clear	
2612	.....	N. W.	Clear	
27	N. W.	Clear	
28	N. W.	Clear	
29	12 m.	†	S. W.	Cloudy	
3071	.....	N. W.	Part cloudy.†	
31	N. W.	Clear	
Sum.	4.92

* Including rain, hail, sleet, and melted snow.

† Trace.

‡ Thunder showers.

§ Heavy wind.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

August, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	72	29.966	75	30.000	61	62	56	55	74	48	....	62
2	68	30.085	73	30.004	64	63	57	57	75	50	....	63
3	67	30.084	68	30.024	62	57	58	55	69	55	....	57
4	69	29.980	65	29.890	63	57	57	57	66	46	....	57
5	63	29.832	58	29.738	56	54	56	54	53	53	....	51
6	59	29.727	63	29.658	56	57	56	57	61	53	....	57
7	63	29.523	70	29.594	62	62	62	55	77	57	....	62
8	67	29.722	68	29.724	62	55	57	53	70	45	....	55
9	67	29.702	65	29.654	60	57	57	57	67	46	....	57
10	68	29.666	75	29.704	66	67	62	65	75	56	....	67
11	71	29.710	73	29.610	66	66	62	66	78	48	....	66
12	73	29.576	73	29.636	61	63	60	63	75	59	....	63
13	68	29.744	72	29.794	61	61	56	55	71	53	....	61
14	70	29.748	73	29.790	63	63	57	60	75	47	....	63
15	70	29.814	73	29.810	65	64	59	62	76	53	....	64
16	71	29.804	73	29.760	66	63	61	60	77	49	....	63
17	73	29.730	75	29.736	68	63	62	60	79	57	....	63
18	73	29.794	74	29.774	67	64	62	58	75	51	....	64
19	73	29.728	76	29.636	69	72	64	66	81	55	....	72
20	73	29.490	72	29.482	66	64	66	63	73	64	....	64
21	70	29.664	73	29.662	66	63	61	59	77	58	....	63
22	71	29.662	77	29.598	66	76	64	65	83	57	....	76
23	75	29.573	76	29.568	65	64	58	63	77	57	....	64
24	72	29.689	72	29.736	62	60	60	56	76	50	....	60
25	66	29.713	59	29.576	56	54	55	54	62	49	....	54
26	60	29.672	65	29.704	56	60	56	59	66	53	....	60
27	67	29.783	69	29.784	64	59	58	57	76	52	....	59
28	65	29.824	69	29.874	60	60	57	59	70	45	....	60
29	63	29.904	61	29.893	58	58	56	56	62	55	....	58
30	61	29.908	57	29.854	60	55	57	54	61	54	....	55
31	57	29.852	63	29.662	56	60	56	58	62	51	....	60
Sum...	.....	.....	.....	.....	1933	1903	1827	1819	2227	1626	...	1903
Mean..	.....	.....	.....	.....	62.3	61.4	58.9	58.7	71.8	52.5	....	61.4

RECORD, AUGUST, 1903.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

August, 1903.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snow fall in inches.			
1					N. W.	Clear	Temperature: Mean maximum, 71.8; mean minimum, 52.5; mean, 62.1; maximum, 83, date, 22d; minimum, 45, date, 8th and 28th.
2					N. W.	Part cloudy..	
3					E.	Part cloudy..	
4	1 p. m.		.13		SE. E.	Cloudy	Precipitation: Total, 2.67 inches; greatest in 24 hours, .96; date, 20th.
5		Night	.40		E.	Cloudy	
6			†		N. E.	Cloudy	
7	Night	6 a. m.	†		N. NW.	Part cloudy..	No. of days with precipitation, 6; clear, 7; partly cloudy, 13; cloudy, 11.
8			†		S. SW.	Clear	
9			†		S. SE.	Cloudy	
10			†		N. W.	Part cloudy..	Date of aurora, 21st.
11					S.	Cloudy	
12			.27		N. W.	Part cloudy..	
13					N. W.	Part cloudy..	Date of aurora, 21st.
14					N. W.	Clear	
15			†		N. W.	Clear	
16					S.	Part cloudy..	Date of aurora, 21st.
17					N. NE.	Part cloudy..	
18					S. E.	Part cloudy..	
19					S. W.	Part cloudy..	Date of aurora, 21st.
20	6 a. m.	Night	.96		N. E.	Cloudy	
21					N. W.	Clear†	
22					SW. W.	Clear	Date of aurora, 21st.
23					N. W.	Clear	
24					N. W.	Part cloudy..	
25	7 a. m.	Night	.81		N. E.	Cloudy	Date of aurora, 21st.
26			†		N. E.	Cloudy	
27					SE. E.	Part cloudy..	
28					S. E.	Part cloudy..	Date of aurora, 21st.
29			†		S. E.	Cloudy	
30			.10		NE. E.	Cloudy	
31			†		N. E.	Cloudy	
Sum.			2.67				

* Including rain, hail, sleet, and melted snow.

† Trace.

‡ Aurora.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

September, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	64	29.662	72	29.634	67	66	64	64	80	57	....	66
2	71	29.832	73	29.842	69	65	66	64	78	55	....	65
3	69	29.878	70	29.856	62	61	62	60	76	58	....	61
4	68	29.822	71	29.794	62	73	62	72	85	56	....	73
5	73	29.680	70	29.630	64	64	63	62	83	63	....	64
6	64	29.718	66	29.768	58	56	50	50	68	53	....	56
7	62	29.847	63	29.928	57	54	51	50	65	45	....	54
8	62	30.039	63	30.056	54	53	51	51	65	36	....	53
9	61	30.082	66	29.954	56	58	53	54	74	35	....	58
10	62	29.871	64	29.796	63	68	60	64	77	56	....	68
11	75	29.740	74	29.868	73	65	68	58	80	65	....	65
12	72	29.996	76	29.960	63	64	61	62	81	48	....	64
13	73	29.896	79	29.778	67	75	63	70	87	51	....	75
14	80	29.814	83	29.826	76	74	70	68	90	69	....	74
15	80	29.873	83	29.860	73	75	69	68	91	61	....	75
16	79	29.902	80	29.772	71	70	66	68	85	63	....	70
17	78	29.668	78	29.478	73	74	71	71	83	68	....	74
18	71	29.674	69	29.908	60	54	55	50	74	54	....	54
19	64	30.114	64	30.096	54	52	50	50	63	39	....	52
20	58	30.116	62	30.040	53	53	51	51	63	43	....	53
21	55	29.910	61	29.768	50	54	47	52	66	49	....	54
22	64	29.814	67	29.834	67	63	60	54	76	50	....	63
23	64	29.816	70	29.594	58	63	55	60	80	44	....	63
24	64	29.400	61	29.674	57	49	56	44	65	49	....	49
25	60	29.718	61	29.834	47	52	44	48	64	35	....	52
26	61	29.844	65	29.816	57	57	51	54	73	38	....	57
27	63	29.752	67	29.567	61	66	60	66	71	52	....	66
28	66	29.662	60	29.792	54	48	49	43	67	47	....	48
29	55	29.914	60	29.960	45	42	40	37	51	36	....	42
30	59	30.042	64	29.956	47	57	44	50	68	31	....	57
Sum...	.....	.....	.....	.....	1818	1825	1718	1715	2235	1502	....	1825
Mean...	.....	.....	.....	.....	60.6	60.8	57.3	57.2	74.5	50.1	...	60.8

RECORD, SEPTEMBER, 1903.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

September, 1903.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	* Amount.	Snowfall in inches.			
1					S. E.	Part cloudy..	Temperature: Mean maximum, 74.5; mean minimum, 50.1 mean, 62.2; maximum, 91;
2					S. E.	Clear	
3					S. E.	Clear	
4					S. SE.	Clear	date, 15th; minimum, 31; date, 30th.
5			†		S. SE.	Cloudy	
6					N. W.	Clear	
7					N.	Part cloudy..	Precipitation: Total, 1.73 inches; greatest in 24 hours, 1.13; date, 17th.
8					S. E.	Clear†	
9					SW. W.	Clear†	
10					N. W.	Clear	No. of days with .01 inch or more precipitation, 3; clear, 21; partly cloudy, 5; cloudy, 4.
11					N. W.	Part cloudy..	
12					S. SW.	Clear	
13					SW. W.	Clear	Dates of thunder storms, 27th: killing frosts, 30th.
14					NW. W.	Clear	
15					S. W.	Clear	
16					S.	Clear	
17	8 p. m.		1.13		S. W.	Cloudy	
18		Night.	.12		N. W.	Clear	
19					E.	Clear	
20					E.	Cloudy	
21					E.	Clear	
22					N. W.	Clear	
23					S. W.	Clear	
24					N. W.	Clear	
25					N. W.	Clear†	
26					S. E.	Clear	
27	12 M.	4 p. m.	.48		NW. W.	Cloudy§	
28					N. W.	Part cloudy.	
29					N. W.	Part cloudy†.	
30					SW. W.	Clear|| .....	
Sum.			1.73				

* Including rain, hail, sleet, and melted snow.

† Trace.

‡ Slight frost.

§ Thunder storm.

|| Killing frost.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT 43° 8' N.

October, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	63	29.862	66	29.742	55	66	51	62	74	46	....	66
2	66	29.766	66	29.994	64	52	63	51	72	52	....	52
3	62	30.082	60	30.048	54	48	50	48	66	43	....	48
4	58	30.03	61	29.886	47	61	43	59	61	33	....	61
5	61	29.820	64	29.806	59	60	57	59	67	59	....	60
6	62	29.922	63	29.960	53	53	53	53	68	48	....	53
7	61	29.976	62	29.950	50	56	48	55	59	46	....	56
8	59	29.764	63	29.752	54	56	54	55	59	58	....	56
9	61	29.736	65	29.728	56	53	56	53	58	53	....	53
10	58	29.854	52	29.848	53	49	48	49	54	49	....	49
11	49	29.846	50	29.678	49	49	46	49	50	46	....	49
12	53	29.536	64	29.600	48	51	48	51	52	48	....	51
13	64	29.650	66	29.650	55	50	51	49	61	48	....	50
14	63	29.550	67	29.636	40	51	37	45	66	37	....	51
15	60	29.790	60	29.778	44	45	42	43	58	32	....	45
16	60	29.822	64	29.712	42	57	41	54	62	35	....	57
17	68	29.592	64	29.322	57	58	53	56	62	52	....	58
18	62	29.164	55	29.534	53	42	42	36	58	48	....	42
19	60	29.774	64	29.760	39	47	38	45	50	47	....	47
20	68	29.586	70	29. 60	52	58	47	52	69	40	....	58
21	68	29.762	65	29.930	47	42	40	40	63	42	....	42
22	64	30.072	66	29.838	34	49	32	45	53	28	....	49
23	62	29.636	68	29.660	52	46	51	46	58	46	....	46
24	60	29.700	60	29.714	42	35	38	32	49	35	....	35
25	56	29.670	54	29.450	30	34	.....	32	48	26	....	34
26	54	29.300	64	29.572	40	30	35	.....	42	28	....	30
27	58	29.682	69	29.774	33	30	.....	.....	40	30	....	30
28	58	29.764	65	29.800	29	34	.....	.....	44	24	....	34
29	58	29.804	.....	.....	32	.....	.....	.....	51	27	.....	.....
30	69	29.722	70	29.800	52	55	46	50	69	41	....	55
31	72	29.864	65	29.791	52	52	46	49	69	49	....	52
Sum...	.....	.....	.....	.....	1467	1469	1256	1318	1812	1298	....	1469
Mean..	.....	.....	.....	.....	47.3	49.0	46.5	48.7	58.4	41.9	....	49.0

RECORD, OCTOBER, 1903.

LONG 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

October, 1903.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1					W.	Cloudy.....	Temperature:
2					E.	Part cloudy..	Mean maximum,
3					E.	Clear.....	58.4; mean mini-
4					S. W.	Part cloudy..	mum, 41.9; mean,
5			†		W.	Cloudy.....	50.2; maximum,
6					S. W.	Part cloudy..	74; date, 1st;
7			†.13		S.	Cloudy.....	minimum, 24;
8			.54		S. E.	Cloudy.....	date, 28th.
9					SE. E.	Cloudy.....	Precipitation:
10					E.	Cloudy.....	Total, 3.74 inches;
11					N. E.	Cloudy.....	greatest in 24
12			1.20		N. E.	Cloudy.....	hours, 1.25 in;
13					NE. NW.	Cloudy.....	date, 17th.
14					N. W.	Clear.....	No. of days with
15					N. W.	Clear.....	.01 inch or more
16					S.	Cloudy.....	precipitation, 5;
17	2 p. m.	Night.	1.25		S. W.	Cloudy.....	clear, 12; partly
18					N. W.	Part cloudy..	cloudy, 7; cloudy,
19					S. W.	Part cloudy..	12.
20					N. W.	Clear.....	Days of killing
21					N.	Clear.....	frosts, 22 and
22					S.	Clear.....	25th.
23	9 a. m.	Night.	.25		S. NW.	Cloudy.....	Auroras, 13th.
24	Sho	wers.	.37		W. NW.	Part cloudy..	
25					N. W.	Clear.....	
26					N. W.	Part cloudy..	
27					N. W.	Clear.....	
28					N. W.	Clear.....	
29					W.	Clear.....	
30					S. W.	Clear.....	
31					N. W.	Clear.....	
Sum.			3.74				

*Including rain, hail, sleet, and melted snow.

† Trace.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

November, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	62	29.764	60	29.760	51	46	46	42	60	47	....	46
2	59	29.800	62	29.750	50	50	43	45	64	47	....	50
3	62	29.770	67	29.700	45	52	40	47	66	45	....	52
4	65	29.650	71	29.642	51	52	47	48	76	46	....	52
5	66	29.312	69	29.300	50	42	50	39	57	42	....	42
6	55	29.518	60	29.640	38	35	36	32	38	35	....	35
7	52	29.600	60	29.682	30	55	.....	50	58	31	....	55
8	50	29.498	67	29.900	39	39	30	35	49	33	....	39
9	60	29.916	64	29.780	39	37	35	34	65	33	....	37
10	65	29.688	75	29.620	35	48	33	47	60	33	....	48
11	70	29.750	66	29.650	40	42	36	41	52	38	....	42
12	65	29.546	67	29.680	42	41	42	38	56	41	....	41
13	70	29.694	66	29.722	29	48	.....	45	58	27	....	48
14	59	29.764	.....	.....	40	34	34	30	50	34	....	34
15	.....	.....	55	29.860	.....	34	.....	30	40	29	....	34
16	59	29.900	62	29.716	31	33	.....	33	38	31	....	33
17	68	29.622	76	29.530	33	35	33	35	39	30	....	35
18	61	29.674	73	29.750	35	34	35	30	40	34	....	34
19	56	29.926	75	30.092	24	26	.....	.....	32	18	....	26
20	64	30.198	62	30.342	13	29	.....	.....	34	14	....	29
21	60	30.392	62	30.242	20	25	.....	.....	36	13	....	25
22	61	30.062	60	29.882	21	34	.....	.....	35	17	....	34
23	62	29.730	64	29.450	26	35	.....	35	40	21	....	35
24	75	29.250	63	29.402	35	30	.....	.....	43	30	....	30
25	62	29.570	60	29.688	20	19	.....	.....	31	19	....	19
26	62	29.784	62	29.788	12	17	.....	.....	26	8	....	17
27	59	29.802	55	29.672	11	23	.....	.....	25	8	....	23
28	50	29.492	56	29.428	20	17	.....	.....	30	12	....	17
29	60	29.466	65	29.400	14	27	.....	.....	31	8	....	27
30	65	29.550	65	29.732	24	23	.....	.....	31	21	....	23
Sum ...	.....	.....	.....	.....	918	1062	.....	.....	1360	845	....	1062
Mean ..	.....	.....	.....	.....	31.7	35.4	.....	.....	45.3	28.1	....	35.4

RECORD, NOVEMBER, 1903.

LONG. 70° 56' W. BAROMETER 1 25 FEET ABOVE SEA LEVEL.

November, 1903.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1					N. W.	Clear	Temperature: Mean maximum, 45.3; mean minimum, 28.1; mean, 36.7; maximum, 76; date, 4th; minimum, 8; date, 26th, 27th, and 29th.
2					N. W.	Clear	
3					W.	Clear	
4					W.	Clear	Precipitation: Total, 2.04 inches; greatest in 24 hours, 1.29 inches; date, 16th-17th.
5	9 a. m.	Night.	.35		S. W.	Cloudy	
6					N. W.	Cloudy	
7					N. W.	Clear	Snowfall: Total, trace.
8					N. W.	Part cloudy..	
9					W.	Part cloudy..	
10					W.	Clear	No. of days with .01 inch or more precipitation, 5; clear, 13; partly cloudy, 9; cloudy, 8.
11	Night.		.07		E.	Clear	
12					W.	Part cloudy..	
13					W.	Part cloudy..	
14					N. W.	Clear	
15					N. W.	Clear	
16	9 a. m.		.49		N. E.	Cloudy	
17		Night.	1.29		N. E.	Cloudy	
18					N. E.	Cloudy	
19					W.	Clear	
20					N.	Clear	
21					S. W.	Clear	
22			†		E.	Cloudy	
23	4 p. m.	Night.	.33		S. W.	Cloudy	
24					N. W.	Part cloudy..	
25					N. W.	Clear	
26					N. W.	Clear	
27					N. W.	Part cloudy..	
28			†		N. W.	Part cloudy..	
29			†		N.	Cloudy	
30					N. W.	Part cloudy..	
Sum.			2.04				
....							

* Including rain, hail, sleet, and melted snow.

† Trace.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

December, 1903.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	64	29.970	70	30.050	12	20	.....	.....	33	10	....	20
2	65	30.020	57	29.884	24	29	.....	.....	32	12	....	29
3	53	29.808	56	29.742	26	30	.....	.....	31	23	....	30
4	54	29.720	62	29.724	30	20	.....	.....	39	26	....	20
5	56	29.760	63	29.704	22	30	.....	.....	30	11	....	30
6	55	29.784	54	29.600	21	28	.....	.....	36	17	....	28
7	45	29.674	64	29.512	12	28	.....	.....	34	14	....	28
8	59	29.710	66	29.780	20	30	.....	.....	36	18	....	30
9	58	29.620	58	29.270	31	33	.....	.....	37	25	....	33
10	60	28.870	66	29.320	34	30	.....	.....	41	28	....	30
11	58	29.522	62	29.760	23	23	.....	.....	33	21	....	23
12	58	30.030	62	29.950	21	28	.....	.....	34	19	....	28
13	55	29.300	48	29.672	44	28	.....	.....	52	23	....	28
14	50	29.914	56	29.900	15	16	.....	.....	30	15	....	16
15	54	29.966	62	29.762	5	15	.....	.....	20	5	....	15
16	58	29.616	62	29.510	12	18	.....	.....	27	10	....	18
17	55	29.626	52	29.638	5	15	.....	.....	23	5	....	15
18	52	29.900	54	30.100	8	7	.....	.....	17	7	....	7
19	61	30.200	62	30.104	7	22	.....	.....	30	5	....	22
20	52	29.672	53	28.974	38	48	.....	.....	48	20	....	48
21	59	29.136	61	29.450	37	30	.....	.....	52	30	....	30
22	62	29.364	55	29.670	30	18	.....	.....	43	18	....	18
23	55	29.824	63	29.720	13	28	.....	.....	33	12	....	28
24	58	29.806	64	29.442	28	40	.....	.....	43	29	....	40
25	57	29.320	54	29.212	51	32	.....	.....	43	31	....	32
26	51	29.128	42	29.404	22	3	.....	.....	38	3	....	3
27	52	29.542	58	29.348	-5	7	.....	.....	10	-8	....	7
28	59	29.562	59	29.888	11	5	.....	.....	22	4	....	5
29	59	30.002	59	29.788	-6	14	.....	.....	17	-7	....	14
30	55	29.594	60	29.638	8	17	.....	.....	27	4	....	17
31	51	29.648	61	29.680	4	19	.....	.....	23	2	....	19
Sum...	.....	.....	.....	.....	607	711	...	.....	1014	432	....	711
Mean..	.....	.....	.....	.....	19.6	22.9	.....	.....	32.7	13.9	....	22.9

RECORD, DECEMBER, 1903.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

December, 1903.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	Amount.*	Snow fall in inches.			
1					N. W.	Clear.	Temperature:
2	Night.				N. NE.	Cloudy.	Mean maximum,
3		Night.	.10	4	N. E.	Cloudy.	32.7.
4			†	†	N.	Clear.	Mean minimum,
5					N.	Cloudy.	13.9.
6					N. W.	Clear.	Mean, 23.2.
7					N. W.	Part cloudy..	Maximum, 52;
8					W.	Part cloudy..	date, 13th, 19th.
9	4 p. m.	Night.	1.25		N. NE.	Cloudy.	Minimum, -8;
10					W.	Cloudy.	date, 27th.
11					W.	Clear.	
12	Night.				W.	Clear.	Precipitation:
13		1.30 p. m.	.23		SW.NW.	Cloudy.	Total, 3.25 inches.
14					W.	Clear.	Greatest in 24
15					N. W.	Clear.	hours, 1.25 inc's;
16					N. W.	Clear.	date, 9th.
17					N. W.	Clear.	
18					N. W.	Clear.	Snow:
19					N. W.	Clear.	Total fall, 12
20	5.30 a. m.	Night.	.27		E. S.	Cloudy.	inches.
21		Night.	†	†	NW.SW.	Part cloudy..	On ground at end
22					N. W.	Part cloudy..	of month, 6 inc's.
23					W.	Part cloudy..	
24					S. W.	Cloudy.	No. of days with
25					N. W.	Part cloudy..	.01 inch or more
26	5 a. m.	3 p. m.	.27	5	N. E.	Cloudy.	precipitation, 6;
27					W.	Cloudy.	clear, 12; partly
28					N. W.	Clear.	cloudy, 9; cloudy,
29	9 p. m.	Night.	.13	3	N. W.	Part cloudy..	10.
30					N. W.	Part cloudy..	
31					N. W.	Part cloudy..	
Sum.			2.25	12			

* Including rain, hail, sleet, and melted snow.

† Trace.

‡ Lunar halo.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

January, 1904.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached thermometer.	Barometer.	Attached thermometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	50	29.588	51	29.614	10	16	.....	.....	31	11	.....	16
2	49	29.862	38	29.616	-1	-2	.....	.....	17	-2	.....	-2
3	39	29.538	49	29.752	0	-5	.....	.....	4	-6	.....	-5
4	38	29.886	52	30.070	-12	-5	.....	.....	-3	-16	.....	-5
5	61	30.218	.....	.....	-5	0	.....	.....	14	-8	.....	0
6	65	30.010	70	29.790	-4	20	.....	.....	26	-12	.....	20
7	60	29.714	62	29.690	12	21	.....	.....	32	10	.....	21
8	55	29.586	65	29.350	20	27	.....	.....	29	9	.....	27
9	54	29.108	.....	.....	26	.....	.....	.....	34	22	.....	27
10	.....	.....	.....	.....	.....	.....	.....	.....	34	22	.....	24
11	57	29.734	67	29.820	9	23	.....	.....	28	7	.....	23
12	52	29.860	65	29.950	24	26	.....	.....	28	15	.....	26
13	61	29.900	65	29.414	24	35	.....	.....	35	22	.....	35
14	63	29.150	75	29.184	33	30	.....	.....	41	30	.....	30
15	72	29.424	60	29.666	23	17	.....	.....	33	17	.....	17
16	55	29.814	65	29.272	10	22	.....	.....	29	-4	.....	22
17	53	29.518	44	29.764	18	10	.....	.....	26	10	.....	10
18	47	30.050	58	30.350	0	0	.....	.....	15	0	.....	0
19	47	30.450	47	30.378	-15	5	.....	.....	13	-17	.....	5
20	53	30.078	61	29.818	5	20	.....	.....	21	-7	.....	20
21	.....	.....	67	29.943	.....	24	.....	.....	32	8	.....	24
22	50	29.941	58	29.550	9	18	.....	.....	29	8	.....	18
23	56	29.584	.....	.....	19	.....	.....	.....	30	17	.....	30
24	.....	.....	49	29.650	.....	23	.....	.....	39	24	.....	23
25	56	29.956	63	30.100	6	11	.....	.....	24	6	.....	11
26	55	30.134	60	29.668	6	15	.....	.....	20	0	.....	15
27	59	29.560	62	30.000	19	10	.....	.....	22	10	.....	10
28	57	30.148	64	30.140	-6	13	.....	.....	21	-8	.....	13
29	53	29.990	60	29.860	13	15	.....	.....	20	8	.....	15
30	55	29.840	62	29.914	12	16	.....	.....	28	0	.....	16
31	50	29.776	47	29.572	-1	34	.....	.....	38	8	.....	34
Sum...	.....	.....	.....	.....	254	433	.....	.....	790	188	.....	520
Mean..	.....	.....	.....	.....	9.1	16.2	.....	.....	25.5	6.1	.....	16.8

RECORD, JANUARY, 1904.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

January, 1904.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1					N. W.	Part cloudy	Temperature: Mean maximum,
2	10.30 a. m.				N. E.	Cloudy	
3		9.30 a. m.	.77	7.5	N. W.	Clear	
4					N. W.	Clear	mum, 6.1; mean, 15.8; maximum, 41; date, 14th; Minimum, -17; date, 19th.
5					N. W.	Clear	
6					S. W.	Clear	
7					N. W.	Cloudy	Precipitation: Total, 5.59 inches; greatest in 24 hours, 1.57 in.; date, 26th-27th.
8	5 p. m.				NW.NE.	Cloudy	
9		Night.	.45	8	N. W.	Cloudy	
10					N. W.	Clear	Snowfall: Total, 32.75 in.
11					N. W.	Part cloudy	
12					N. E.	Cloudy	
13	8 a. m.				N. E.	Cloudy	No. of days with .01 inch or more precipitation, 7; clear, 13; partly cloudy, 6; cloudy, 12.
14		6 a. m.	1.50		N. W.	Clear	
15					N. W.	Clear	
16	3 p. m.	Night.	.15	1.5	N. E.	Cloudy	No. of days with .01 inch or more precipitation, 7; clear, 13; partly cloudy, 6; cloudy, 12.
17					N. W.	Clear	
18					N. W.	Clear	
19					N. W.	Clear	No. of days with .01 inch or more precipitation, 7; clear, 13; partly cloudy, 6; cloudy, 12.
20	6 a. m.	10 a. m.	†	.25	W.	Cloudy	
21	4 p. m.				N. E.	Cloudy	
22					N. E.	Cloudy	No. of days with .01 inch or more precipitation, 7; clear, 13; partly cloudy, 6; cloudy, 12.
23		4 p. m.	1.15	6.00	W.	Cloudy	
24					W.	Part cloudy	
25					W.	Clear	No. of days with .01 inch or more precipitation, 7; clear, 13; partly cloudy, 6; cloudy, 12.
26	2 p. m.				N. E.	Cloudy	
27		1 a. m.	1.57	9.50	N. W.	Clear	
28					W.	Clear	No. of days with .01 inch or more precipitation, 7; clear, 13; partly cloudy, 6; cloudy, 12.
29					N. E.	Part cloudy	
30					NE. E.	Part cloudy	
31					S. SW.	Part cloudy	
Sum.			5.59	32.75			

*Including rain, hail, sleet, and melted snow.

† Trace.

METEOROLOGICAL
DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

February, 1904.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	3 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	57	29.138	61	29.150	31	12			40	12	....	12
2	55	29.800	62	29.650	-3	11	.....	.....	14	-3	....	11
3	54	29.586	64	29.820	15	10	.....	.....	20	8	....	10
4	59	29.882	61	29.836	1	8	.....	.....	18	1	....	8
5	52	29.800	67	29.933	2	16	.....	.....	17	2	....	16
6	51	29.786	58	29.538	5	13	.....	.....	13	-6	....	13
7	52	29.548	45	29.080	12	20	.....	.....	20	12	....	20
8	47	29.450	59	29.878	18	5	.....	.....	42	5	....	5
9	50	30.042	54	29.988	-5	0	.....	.....	6	-7	....	0
10	48	29.980	63	29.972	-2	11	.....	.....	17	-6	....	11
11	48	30.108	63	30.046	-1	20	.....	.....	23	-6	....	20
12	57	30.018	67	30.038	10	22	.....	.....	28	1	....	22
13	55	30.064	63	30.522	24	23	.....	.....	30	-1	....	23
14	52	30.002	45	29.672	10	20	.....	.....	33	5	....	20
15	45	29.364	61	29.314	18	20	.....	.....	25	10	....	20
16	52	29.318	57	29.332	1	5	.....	.....	22	1	....	5
17	48	29.412	51	29.780	3	8	.....	.....	15	3	....	8
18	60	30.010	66	30.040	10	20	.....	.....	30	5	....	20
19	59	29.944	71	29.850	15	20	.....	.....	21	8	....	20
20	59	30.100	65	30.294	12	27	.....	.....	30	12	....	27
21	65	30.312	52	30.008	0	31	.....	.....	35	-3	....	31
22	55	29.328	55	29.372	40	33	.....	.....	46	19	....	33
23	59	29.654	70	29.422	25	37	.....	.....	40	22	....	37
24	65	29.370	68	29.340	33	26	.....	.....	40	25	....	26
25	60	29.400	64	29.660	10	11	.....	.....	28	11	....	11
26	65	29.962	62	30.000	9	13	.....	.....	22	7	....	13
27	52	30.176	53	29.912	7	26	.....	.....	38	0	....	26
28	58	30.096	50	29.740	25	33	.....	.....	34	13	....	33
29	49	29.936	59	30.040	32	31	.....	.....	36	19	....	31
Sum...	.....	.....	.....	.....	357	532	.....	.....	783	169	.....	532
Mean..	.....	.....	.....	.....	12.3	18.3	.....	.....	27.0	5.8	.....	18.3

RECORD, FEBRUARY, 1904.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

February, 1904.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1					N. W.	Clear	Temperature:
2	7 p. m.	Night	.04	.25	N. W.	Part cloudy	Mean maximum,
3					W.	Part cloudy	27; mean mini-
4					N.W.W	Part cloudy	mum, 5.8; mean,
5	Night				N. W.	Part cloudy	16.4; maximum,
6					E.	Cloudy	46; date, 22d; min-
7		Night	1.13	3.00	E.	Cloudy	imum, —7; date,
8					N. W.	Clear	9th.
9					N. W.	Clear	
10					N. W.	Clear	Precipitation:
11					N. W.	Clear	Total, 3.28 inches;
12	3 p. m.				N. E.	Cloudy	greatest in 24
13		9.30 a. m.			N. E.	Cloudy	hours, 1.49; date,
14	4 p. m.				N. E.	Cloudy	15th.
15		Night	1.49	10.00	N. E.	Cloudy	
16					N. W.	Clear	Snowfall, 14.75
17					N. W.	Clear	inches.
18					N. W.	Clear	
19	7 a. m.	7 p. m.			N. E.	Cloudy	No. of days with .01
20					N. W.	Clear	inch or more pre-
21	Night	9 a. m.	.30		N. E.	Cloudy	cipitation, 6; clear,
22					E. N.W.	Part cloudy	12; partly cloudy,
23					S. W.	Part cloudy	6; cloudy, 11.
24	8 a. m.	Night	.15	1.50	S. W.	Cloudy	
25					N. W.	Clear	
26					N. W.	Clear	
27					N. W.	Clear	
28	1 p. m.	4 p. m.	.17	†	S. W.	Cloudy	
29					N. E.	Cloudy	
Sum.			3.28	14.8			

* Including rain, hail, sleet, and melted snow.

† Trace.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

March, 1904.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	34	29.936	60	30.000	25	25	.....	.....	31	23	....	25
2	63	30.004	28	29.920	25	29	.....	.....	43	22	.....	29
3	65	29.522	78	29.298	33	40	.....	.....	46	26	.....	40
4	55	29.870	64	30.238	8	10	.....	.....	43	8	.....	10
5	60	30.612	64	30.612	2	9	.....	.....	19	-9	.....	9
6	53	30.382	48	29.918	18	28	.....	.....	29	4	.....	28
7	57	29.930	67	29.550	31	40	.....	.....	40	26	.....	40
8	69	29.384	64	29.300	40	40	.....	.....	53	37	.....	40
9	68	29.342	57	29.480	32	17	.....	.....	44	17	.....	17
10	49	29.614	52	29.650	10	18	.....	.....	22	10	.....	18
11	53	29.568	57	29.366	22	27	.....	.....	31	16	.....	27
12	63	29.366	62	29.412	18	23	.....	.....	23	12	.....	23
13	53	29.444	42	29.600	20	22	.....	.....	30	22	.....	22
14	53	29.704	64	29.678	23	33	.....	.....	40	15	.....	33
15	60	29.570	63	29.450	29	30	.....	.....	45	26	.....	30
16	60	29.560	54	29.808	27	20	.....	.....	34	20	.....	20
17	60	30.238	65	29.950	20	28	.....	.....	40	13	.....	28
18	62	29.800	65	29.464	22	31	.....	.....	32	18	.....	31
19	67	29.636	60	29.612	28	42	.....	.....	46	14	.....	42
20	60	29.676	62	29.750	40	35	.....	.....	43	35	.....	35
21	62	30.070	63	30.170	30	33	.....	.....	49	25	.....	33
22	65	30.114	68	29.730	33	34	.....	.....	39	29	.....	34
23	67	29.670	71	30.170	43	46	.....	.....	52	33	.....	46
24	72	30.240	74	30.250	40	40	.....	.....	57	33	.....	40
25	74	30.000	73	29.732	35	55	.....	.....	57	29	.....	55
26	67	29.316	60	29.382	60	42	.....	.....	64	34	.....	42
27	55	29.748	53	29.700	32	30	.....	.....	37	26	.....	30
28	58	29.872	60	29.832	26	31	.....	.....	36	27	.....	31
29	58	29.900	57	30.022	28	32	.....	.....	39	22	.....	32
30	50	30.126	58	30.036	30	34	.....	.....	45	18	.....	36
31	56	30.050	62	30.076	35	36	.....	.....	43	27	.....	36
Sum...	.....	.....	.....	.....	865	960	.....	.....	1252	658	.....	960
Mean..	.....	.....	.....	.....	27.9	31.0	.....	.....	40.4	21.2	.....	31.0

RECORD, MARCH, 1904.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

March, 1904.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1	1 a. m.				N. E.	Cloudy	Temperature:
2		2 p. m.	.29	2.50	S. E.	Clear	Mean maximum,
3	6 a. m.	Night	.56	†	S. W.	Cloudy	40.4; mean minimum, 21.2; mean,
4					N. W.	Clear	30.8; maximum,
5					S. W.	Cloudy	64; date, 26th;
6					S. E.	Cloudy	minimum, -9;
7	3 p. m.	Night	1.05		S. SE.	Cloudy	date, 5th.
8					NW.W.	Part cloudy..	
9					N. W.	Part cloudy..	
10					N. W.	Part cloudy..	Precipitation:
11					S. W.	Part cloudy..	Total, 3.20 inches;
12					N. W.	Clear	greatest in 24
13					N. W.	Clear	hours, 1.05; date,
14					S. W.	Cloudy	7th.
15	6.30 a. m.	Night	.25	3	N. E.	Cloudy	
16					N. W.	Clear	Snow:
17					W.	Clear	Total fall, 11.5
18	7 a. m.	7 p. m.	.70	6	SW. NE.	Cloudy	inches; 3 inches
19		Night	.11		S. E.	Cloudy	on ground 15th;
20					N. W.	Part cloudy..	on ground at end
21					SW. NE.	Part cloudy†	month, 0 inches.
22	11 a. m.				N. E.	Cloudy	
23		10 a. m.	.25		W.	Cloudy	No. of days with
24					W.	Clear	01 inch or more
25					W.	Cloudy	precipitation. 8;
26					N. W.	Part cloudy..	clear, 10; partly
27					S. W.	Part cloudy..	cloudy, 9; cloudy,
28	Showers		.05	†	S. E.	Cloudy	12.
29					N. W.	Clear	
30					S. SW.	Clear	
31					S. SE.	Part cloudy..	
Sum.			3.20	11 50			

* Including rain, hail, sleet, and melted snow.

† Trace.

‡ Earthquake, 1.05 a. m.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

April, 1904.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	57	30 000	57	29.470	35	35	35	35	39	34	....	35
2	58	29.326	60	29.484	43	41	40	....	52	23	....	41
3	53	29.484	63	29.782	35	30	....	....	43	29	....	30
4	50	29.972	58	29.800	29	44	....	....	50	17	....	44
5	58	29.850	73	29.833	44	49	36	....	62	35	....	49
6	70	29.392	68	29.914	47	38	....	....	54	19	....	38
7	60	29.742	71	29.770	35	41	....	....	48	32	....	41
8	69	29.914	68	29.920	45	42	....	....	55	35	....	42
9	55	29.710	63	29.498	39	40	39	40	44	28	....	40
10	60	29.316	62	29.322	40	48	40	....	65	35	....	48
11	60	29.400	69	29.540	43	45	42	....	55	35	....	45
12	64	29.522	68	29.430	37	44	37	40	57	37	....	44
13	63	29.526	67	29.620	37	35	32	32	48	35	....	35
14	59	29.664	63	29.686	33	32	....	....	45	21	....	32
15	60	29.780	66	29.700	33	40	....	....	49	25	....	40
16	45	29.350	59	29.672	27	33	....	....	43	19	....	33
17	52	29.838	53	29.800	33	38	....	....	45	22	....	38
18	58	29.750	67	29.620	38	42	....	....	57	26	....	42
19	62	29.520	68	29.450	42	40	....	....	50	31	....	40
20	66	29.314	62	29.500	29	33	....	....	40	26	....	33
21	59	29.650	62	29.900	37	40	....	....	48	40	....	40
22	64	30.120	67	30.180	45	38	....	....	51	31	....	38
23	64	30.200	61	30.096	46	42	....	....	59	29	....	42
24	62	29.962	60	29.734	47	49	....	....	62	34	....	49
25	60	29.504	68	29.380	45	51	....	....	62	42	....	51
26	68	29.550	70	29.762	50	46	....	....	56	40	....	46
27	59	29.900	57	29.950	43	44	....	40	47	40	....	44
28	51	29.884	54	29.770	40	40	40	40	42	39	....	40
29	52	29.604	60	29.460	44	47	44	47	49	39	....	47
30	60	29.400	....	....	54	....	....	....	65	45	....	58
Sum...					1195	1187	....	....	1542	943	....	1187
Mean..					39.8	40.9	....	....	51.4	31.4	....	40.9

RECORD, APRIL, 1904.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

April, 1904.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snowfall in inches.			
1	Night of Mar. 31.	6 p. m.	1.22	.....	E.	Cloudy.....	Temperature:
2	.....	.....	.....	.....	N. W.	Part cloudy..	Mean maximum,
3	.....	.....	.....	.....	N. W.	Cloudy.....	51.4; mean mini-
4	.....	.....	.....	.....	N. W.	Clear.....	mum, 31.4; mean,
5	.....	.....	.....	.....	N. W.	Clear.....	41.4; maximum,
6	.....	.....	.....	.....	S. E.	Cloudy.....	65; date, 10th,
7	8 a. m.	11 a. m.	.30	.....	N. NW.	Part cloudy..	30th; minimum,
8	.....	.....	.....	.....	S. E.	Clear.....	17; date, 4th.
9	Night.	.....	.45	.....	N. E.	Cloudy.....	
10	Night.	.....	.90	.....	W.	Clear.....	Precipitation:
11	.....	.....	.....	.....	W.	Cloudy.....	Total, 8.61 inches;
12	6 a. m.	11 a. m.	.17	.....	W.	Cloudy.....	greatest in 24
13	.....	.....	.....	.....	N. W.	Clear.....	hours, 1.12 in-
14	.....	.....	.....	.....	N. W.	Part cloudy..	ches; date, 16th.
15	.....	.....	.....	.....	N. W.	Clear.....	
16	1 a. m.	11 a. m.	1.12	5	N. W.	Cloudy.....	Snowfall:
17	.....	.....	.....	.....	W.	Part cloudy..	Total, 6 inches.
18	.....	.....	.....	.....	S. W.	Clear.....	
19	Showers.	.....	†	.....	S. E.	Part cloudy..	No. of days with
20	3 p. m.	6 p. m.	.68	1	N. E.	Cloudy.....	.01 inch or more
21	.....	.....	.15	†	N. W.	Clear.....	precipitation, 12;
22	.....	.....	.....	.....	S. E.	Clear.....	clear, 12; partly
23	.....	.....	.....	.....	S.	Clear.....	cloudy, 7; cloudy,
24	.....	.....	.....	.....	S.	Clear.....	11.
25	Showers.	.....	.12	.....	S.	Part cloudy..	
26	.....	.....	.....	.....	S.	Clear.....	
27	6 a. m.	.....	.....	.....	E.	Cloudy.....	
28	.....	.....	.....	.....	E.	Cloudy.....	
29	.....	.....	.....	.....	N. E.	Cloudy.....	
30	.....	6 a. m.	3.50	.....	N. W.	Part cloudy..	
Sum.	.....	.....	8.61	6	.....	.....	.....

*Including rain, hail, sleet, and melted snow.

† Trace.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

May, 1904.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	s a. m.	s p. m.	s a. m., wet.	s p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	63	29.624	64	29.800	56	44	.....	.....	59	44	....	44
2	65	29.950	67	30.064	55	43	.....	.....	52	34	....	43
3	65	30.050	70	30.000	52	51	.....	.....	71	31	....	51
4	68	30.000	73	29.844	62	69	.....	.....	83	39	....	69
5	73	29.800	73	29.764	70	69	.....	.....	80	51	....	69
6	68	29.166	65	29.900	58	57	45	45	71	47	....	57
7	65	29.900	73	29.812	54	69	50	58	83	39	....	69
8	69	29.768	73	29.670	67	67	60	60	82	52	....	67
9	68	29.610	57	29.380	58	54	57	54	71	51	....	54
10	71	29.580	65	29.704	63	53	59	52	62	52	....	53
11	60	29.750	67	29.774	50	51	50	51	65	46	....	51
12	64	29.830	70	29.790	55	54	52	52	73	46	....	54
13	67	29.838	67	29.850	63	54	52	52	69	43	....	54
14	60	29.824	52	29.742	55	48	53	45	58	47	....	48
15	51	29.626	55	29.500	47	45	45	45	48	45	....	45
16	51	29.420	56	29.524	47	51	47	45	60	44	....	51
17	60	29.670	65	29.740	53	57	45	52	71	43	....	57
18	60	29.664	50	29.650	55	.....	51	.....	58	47	....	48
19	55	29.532	55	29.494	53	52	53	52	53	47	....	52
20	59	29.512	63	29.470	57	57	56	52	69	45	....	57
21	65	29.510	72	29.600	61	60	52	54	76	51	....	60
22	73	29.680	77	29.664	68	69	60	62	84	47	....	69
23	77	29.720	75	29.650	68	67	59	55	81	52	....	67
24	71	29.650	77	29.740	66	71	62	60	84	60	....	71
25	69	29.876	68	29.732	60	58	55	58	76	50	....	58
26	75	29.650	78	29.550	72	68	65	68	85	57	....	68
27	77	29.400	68	29.528	72	61	67	52	79	61	....	61
28	72	29.716	72	29.700	60	63	52	57	72	59	....	63
29	72	29.850	71	29.812	63	67	57	60	80	46	....	67
30	74	29.734	73	29.570	66	63	65	63	69	57	....	63
31	.....	.....	70	29.832	59	58	54	55	72	58	....	58
Sum ...	.....	.....	.....	.....	1845	1746	1423	1359	2198	1501	....	1746
Mean ..	.....	.....	.....	.....	59.5	58.2	54.7	54.7	70.8	48.4	....	58.2

RECORD, MAY, 1904.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

May, 1904.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	* Amount.	Snowfall in inches.			
1					S.	Part cloudy..	Temperature:
2					S.	Clear.....	Mean maximum,
3					S.	Clear.....	70.8; mean mini-
4					S. W.	Clear.....	mum, 48.4; mean,
5					N.	Clear.....	59.6; maximum, 85;
6					S. E.	Clear.....	date, 26th; mini-
7					S. E.	Clear.....	mum, 31; date, 3d.
8					S. W.	Clear.....	
9	8.30 a. m.	6 p. m.	.98		N. E.	Cloudy.....	Precipitation:
10		Night.	.18		S. E.	Cloudy.....	Total, 3.30 inches;
11					S. E.	Cloudy.....	greatest in 24
12					S. E.	Part cloudy..	hours, 98; date,
13					S. E.	Clear.....	9th.
14	6 a. m.	6 p. m.	.02		N. E.	Cloudy.....	
15					N. E.	Cloudy†.....	No. of days with .01
16		6 a. m.	.80		N. E.	Cloudy.....	inch or more pre-
17		Shower.	.12		S. W.	Part cloudy..	cipitation, 9; clear
18		Night.			E.	Part cloudy..	18; partly cloudy,
19					N. E.	Cloudy.....	5; cloudy, 8.
20		8 a. m.	.49		S. W.	Part cloudy..	
21					S. W.	Clear.....	Dates of thunder-
22					S.	Clear.....	storms, 15th and
23		Night.	.04		S. W.	Clear.....	25th.
24					N. W.	Clear.....	
25	7 p. m.	9 p. m.	.30		S.	Clear.....	
26	7 p. m.	8.30 p. m.	.08		S. W.	Clear.....	
27					S. W.	Clear.....	
28					W.	Clear.....	
29					W.	Clear.....	
30	10 a. m.	4 p. m.	.08		W.	Cloudy.....	
31					W.	Clear.....	
Sum.			3.30				

* Including rain, hail, sleet, and melted snow.

† Thunder shower.

METEOROLOGICAL

DURHAM, STRAFFORD COUNTY, N. H. LAT. 43° 8' N.

June, 1904.	8 A. M.		8 P. M.		TEMPERATURE.							
	Attached ther- mometer.	Barometer.	Attached ther- mometer.	Barometer.	8 a. m.	8 p. m.	8 a. m., wet.	8 p. m., wet.	Maximum.	Minimum.	Mean.	Set maximum.
1	56	29.902	58	29.876	52	50	50	49	62	50	....	50
2	57	29.828	59	29.817	50	53	48	51	55	44	....	53
3	58	29.738	66	29.638	53	57	52	56	65	49	....	57
4	71	29.838	70	23.949	69	55	58	52	73	53	....	55
5	66	29.714	79	29.548	61	77	60	73	88	53	....	77
6	61	29.710	61	29.714	51	49	51	49	55	49	....	49
7	58	29.621	66	29.624	52	57	51	56	69	48	....	57
8	58	29.678	61	29.746	54	56	54	54	59	52	....	56
9	59	29.966	62	30.060	54	51	52	46	59	49	....	51
10	61	30.032	64	29.858	58	55	49	50	66	36	....	55
11	67	29.750	67	29.770	66	54	55	51	70	46	....	54
12	65	29.818	66	29.921	62	53	52	50	66	42	....	53
13	61	30.008	63	29.974	53	51	47	46	61	44	....	51
14	67	29.948	67	29.868	62	54	53	50	67	45	....	54
15	67	29.836	71	29.966	58	64	53	59	75	43	....	64
16	66	29.736	73	29.788	61	56	56	56	79	55	....	56
17	73	29.866	70	29.770	67	59	56	54	71	51	....	59
18	71	29.688	75	29.688	65	59	57	59	77	50	....	69
19	71	29.814	74	29.736	65	64	52	55	77	53	....	64
20	73	29.742	77	29.636	68	67	58	61	82	49	....	67
21	79	29.436	83	29.316	74	76	70	68	86	58	....	76
22	78	29.330	72	29.570	73	63	69	58	83	63	....	63
23	67	29.932	69	29.976	68	61	55	51	75	51	....	61
24	71	29.988	79	29.832	68	72	60	63	85	50	....	72
25	76	29.762	80	29.688	72	69	67	68	89	60	....	69
26	84	29.630	87	29.628	80	80	76	71	92	63	....	80
27	67	29.718	76	29.790	71	67	61	54	80	65	....	67
28	73	29.920	70	29.820	70	63	58	51	74	48	....	63
29	68	29.718	63	29.668	63	57	58	55	63	55	....	57
30	64	29.680	70	29.566	58	71	58	70	71	54	....	71
Sum. .	.....	.....	.....	.....	1878	1840	1694	1686	2174	1528	....	1840
Mean..	.....	.....	.....	.....	62.6	61.3	56.5	56.2	72.5	50.9	....	61.3

RECORD, JUNE, 1904.

LONG. 70° 56' W. BAROMETER 125 FEET ABOVE SEA LEVEL.

June, 1904.	PRECIPITATION.				Prevailing wind direction.	Character of day.	Remarks.
	Time of beginning.	Time of ending.	*Amount.	Snow fall in inches.			
1	.....	.....	.....	.....	E.	Cloudy.....	Temperature:
2	.....	.....	.....	.....	E.	Cloudy.....	Mean maximum,
3	3 a. m.	5 a. m.	1.30	.....	N. E.	Cloudy.....	72.5.
4	.....	.....	.....	.....	E.	Cloudy.....	Mean minimum,
5	.....	.....	.....	.....	SW. W.	Part cloudy..	50.9.
6	12.30 p.m.	2.30 p. m.	1.54	.....	SE. E.	Cloudy†.....	Mean, 61.7.
7	Night.	8.15 a. m.	.21	.....	SE. E.	Cloudy.....	Maximum, 92;
8	.....	.....	†	.....	SE. E.	Cloudy.....	date, 26th.
9	.....	.....	.....	.....	S. E.	Cloudy.....	Minimum, 36;
10	.....	.....	.....	.....	S.	Cloudy.....	date, 10th.
11	.....	.....	.....	.....	S. SE.	Clear.....	Precipitation:
12	.....	.....	.....	.....	S. SE.	Clear.....	Total, 5.65 inch's.
13	.....	.....	.....	.....	S.	Clear.....	Greatest in 24
14	.....	.....	.....	.....	S. SE.	Clear.....	hours, 1.54; date,
15	.....	.....	.....	.....	S. SW.	Cloudy.....	6th.
16	.....	.....	.....	.....	N. NW.	Cloudy.....	No. of days with
17	.....	.....	.....	.....	SE. E.	Part cloudy..	.01 inch or more
18	.....	.....	.....	.....	N. W.	Clear.....	precipitation, 6;
19	.....	.....	.....	.....	N. W.	Clear.....	clear, 8; partly
20	.....	.....	.....	.....	S. SE.	Clear.....	cloudy, 6; cloudy,
21	2.30 a. m.	4 p. m.	†	.....	S. W.	Part cloudy.†	16.
22	6.30 a. m.	1.30 p. m.	†	.....	W.	Cloudy.....	Dates of thunder
23	.....	.....	.....	.....	S. E.	Cloudy.....	storms, 6th, 21st,
24	.....	.....	.....	.....	S. SW.	Clear.....	and 25th.
25	5.15 p. m.	5.45 p. m.	.56	.....	NW. W.	Cloudy†.....	Slight frost on
26	.....	.....	.....	.....	N. W.	Part cloudy..	low ground on
27	.....	.....	.....	.....	N. W.	Part cloudy..	the 10th.
28	.....	.....	.....	.....	S. W.	Cloudy.....	
29	9 a. m.	1.30 p. m.	.57	.....	S. E.	Cloudy.....	
30	9 a. m.	8 p. m.	1.47	.....	S. E.	Cloudy.....	
Sum.	.....	.....	5.65	.....		

* Including rain, hail, sleet, and melted snow.

† Trace.

‡ Thunder storms.

METEOROLOGICAL SUMMARY.—1903-1904.

MONTHS.	Average temperature.*		Precipitation.		Snow in inches.		Number of days of .01 inch precipitation.		1903-1904.			
	July 1, 1895, to July 1, 1904.	1903-1904.	Average, 1895, to July 1, 1904.	1903-1904.	Average, 1895, to July 1, 1904.	1903-1904.	Average, 1895, to July 1, 1904.	1903-1904.	Prevailing wind direction.	Days clear.	Days partly cloudy.	Days cloudy.
July.....	68.9	68.0	3.64	4.92	.....	.....	6	8	N. W.	13	8	10
August.....	66.0	61.9	3.11	2.67	.....	.....	8	9	N. W.	7	13	11
September.....	59.5	60.7	4.00	1.73	.....	.....	8	3	N. W.	21	5	4
October.....	48.0	48.1	3.68	3.74	.....	.....	7	5	N. W.	12	7	12
November.....	36.5	33.5	3.80	2.04	.....	.....	8	5	N. W.	13	9	8
December.....	25.2	21.3	3.71	2.25	.....	.....	8	6	N. W.	12	9	10
January.....	20.1	12.7	4.22	5.59	.....	12.0	8	7	N. W.	13	6	12
February.....	21.9	15.3	3.84	3.28	.....	32.8	7	6	N. W.	12	6	11
March.....	22.2	29.4	5.11	3.20	.....	14.8	10	8	N. W.	10	9	12
April.....	43.5	40.3	3.99	8.61	.....	11.5	9	12	N. W.	12	7	11
May.....	55.2	58.8	2.70	3.30	.....	6.0	9	6	S. W.	18	5	8
June.....	63.0	62.0	3.82	5.65	.....	.....	8	6	S. E.	8	6	16
Sum.....	540.0	512.0	45.62	46.98	58.5	77.1	98	81	N. W.	151	90	125
Mean.....	45.0	42.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Average of 8 a. m. and 8 p. m. observations.

APPENDIX

EXERCISES
AT
INAUGURATION OF PRESIDENT
AND
Dedication of Morrill Hall

NEW HAMPSHIRE COLLEGE OF
AGRICULTURE AND THE
MECHANIC ARTS

AT DURHAM

WEDNESDAY, OCTOBER 28, 1903

INAUGURAL EXERCISES.

INTRODUCTORY ADDRESS BY HIS EXCELLENCY, NAHUM J.
BACHELDER, GOVERNOR.

We have assembled today in the name of the New Hampshire College of Agriculture and Mechanic Arts to observe the formal ceremonies incident to the inauguration of a president and the dedication of a building—an important event in the history of the institution and of the state. The event is important to the institution because of the reflection of the personal characteristics of a president in the policy and trend of the college, and important to the state because of the magnitude of the interests which this institution represents, is expected to promote and for which purpose it was established and is maintained. The interests upon which the welfare of the people of the state depend and in which the state exercises authority and renders financial support are many and varied, but those departments having for their object the education of the people through natural and moral development and culture are of greater importance than those dealing simply with the financial and business matters. When the education supervised and supported by the state has the welfare of the industrial class for its special object, qualifying them to occupy more influential and remunerative positions in the industrial world, thereby promoting their prosperity and the prosperity of the state, it becomes a matter of the greatest importance, appealing to the interest and co-operation of every loyal citizen of the state.

This institution, established in the first instance through appropriations made by the federal government, afterwards liberally added to by the state and individuals, later was so splendidly endowed by a citizen of Durham as to cause its

removal here where it has found a convenient and agreeable home. It is not our intention to recite the various facts that go to make up the early history of this college, nor to refer even in the briefest manner to occurrences and events that have more recently transpired, for we have no disposition to shield or attack any defender or defamer of this worthy institution. The real friends of the college are content to let the record of the future render the verdict. We will briefly consider the relation that should exist between the college and state and the treatment expected of each by the other.

The state of New Hampshire should appreciate the magnitude of her industrial interests as well as the relative proportion of the people engaged in industrial pursuits, and consider this college an important agency in state development and a means for securing desirable results, rather than an incubus to be supported. The state, through its executive and legislative branches, should appreciate the possibilities of such an institution and see that it is properly directed and liberally supported. While its inquiries should be framed with sincerity and loyalty, it has the right to say to the president of this institution, "What are you giving us for \$60,000 annually placed in your hands for supporting it?" It will not be asked how many lawyers, physicians, clergymen and teachers have you sent into the world, but "how many farmers, mechanics, engineers, artisans and women, trained in domestic science, have you sent into the state to develop agriculture, manufacturing, transportation and the art of good housekeeping within the state?" The state of New Hampshire has not established this college to provide, on account of federal, state and individual support, a general education that cannot be obtained elsewhere in the state at any price. Recognizing the fact that this institution is a mechanical, as well as an agricultural college and that the mechanical, engineering, scientific and domestic science departments are important in training men and women for a successful and honorable

career in their chosen fields of labor, the state demands that these departments be not neglected.

We also refer to the fact that the state has said to this institution in making appropriations, in accepting the bequest of Benjamin Thompson, whose great object was to benefit agriculture, and in requiring seven of the ten trustees to be farmers, that agriculture should be given great prominence in its affairs. Statistics have been quoted here, showing a decline in New Hampshire agriculture, which, if correct, would afford good reason for making such instruction even more prominent. In point of fact, the gross cash value of the products of New Hampshire farms was never greater than at the present time and the advantages of a social and financial nature were never more available to the tillers of New Hampshire farms than now. With the strong support of this institution in equipping men for the farms, trained in the science and art of this ancient and honorable calling, and women skilled in domestic economy and the art of home making, all with quickened mental power, enabling them to become not only leaders in their occupation but leaders as citizens, we will have given such an impetus to rural development as will commend the institution to every loyal citizen of New Hampshire. With such objects and purposes as these clearly defined and well executed, the state says to the president of this college, "We will give you unstinted support and the doors of our treasury are open to you."

It may be presumed to even suggest the demands to be made upon the state by the college, for these are within the province of the loyal and able president to be inaugurated today, yet, I venture to say what modesty may prevent him from saying, but what I have already referred to incidentally, that the state should appreciate not only the importance but the intricate nature of industrial education. An education that trains the hand while it develops the mind, that interests and enthuses the student while it instructs, that, while teaching him the power of mental alertness, re-

tains and expands the sentiment that all honest labor is honorable, is a work as difficult and intricate as any educational institution is called upon to perform.

The college has also the right to demand of the state a financial policy commensurate with the nature of its duties. While some forms of education may be obtained here at less expense than any other form elsewhere, the quite general impression that appropriations for the support of industrial colleges are to provide education at low cost to students is erroneous. While appropriations may have this effect, the expense of apparatus and equipment and the scarcity of qualified instructors renders federal, state and individual aid necessary in order that the cost of instruction in these institutions may not be entirely beyond the reach of students. These facts justify the college in demanding a liberal policy on the part of the state, not as a contribution to the expenses of the students educated, but as a necessity in making such education available for the welfare of the state.

The college has also the right to demand of the state absolute neutrality in partisan matters in dealing with the institution. To the credit of the state it may be said that thus far there has been not the slightest appearance of violation of this important principle and there is no indication that it will be otherwise in the future. Political economy, in the broad sense, will be taught here, but its application must be left to the students, and their affiliation with such political party as to them best represents their ideas of government. Speaking in a broader sense for both state and college, we perceive great advantages from cordial relationship. No educational system fostered by the state is more intimately associated with its progress and development than that symbolized by this institution. Whatever is advantageous to the state in the line of development should be advantageous to the college and whatever is advantageous to the college is likewise beneficial to the state. The state establishes and supports institutions and departments only

to the extent which its resources warrant, while an institution or department is of itself important only so far as the interest which it represents and the results accomplished entitle it to be important.

Our knowledge of the sentiment among the people of the state towards this institution justifies us in the opinion that there is a general interest in it that only requires the quickening influence of organized effort to develop into cordial and enthusiastic support. Under the firm guiding hand of the president inaugurated today there will be such thorough organization of the forces connected with the institution and such confidence in the management throughout the state, as to win for it the enthusiastic co-operation, not only of the farmers and all their organizations, but of the great army of industrial workers in city and town. Farmers and engineers, artisans and home-makers will gather here under the inspiring banner, proclaiming to the people of New Hampshire that health, happiness and prosperity are secured through honest toil, the key to which is deposited here and can be obtained by proper effort. This is the banner flung to the breeze today and which will long continue to wave in Durham's pure atmosphere. The training of the head, the heart and the hand of the industrial people is the most potent factor in averting the dire results of monopoly and so long as danger from that source continues, so long will industrial educational institutions remain, which will be to the end of time.

INAUGURAL ADDRESS.

BY WILLIAM D. GIBBS, M. S., PRESIDENT OF THE COLLEGE.

THE MISSION OF THE LAND GRANT COLLEGES.

In the history of the world the conflict of the masses with the classes has played an important part. In the history of education we find record of a fierce struggle in which the masses have made steady gains upon the ranks of the classes and today victory crowns their efforts.

Years ago the educational idea was culture and, owing to the fact that people looked to Greece for their ideals, the education of the time consisted largely in a study of the Greek classics. This education was open to men but not to women and none but ecclesiastics and a few of the rich upper class could afford the luxury of a training which had little or nothing to do with the every day work of the world. The chief merit of Greek learning was its absolute divorcement from the practical and commonplace things of life, for in this divorcement lay its claim to lofty cultural ideals. Indeed until comparatively recent time the idea of education for service, the training in vocational studies, the preparation for life work by the study of technical subjects formed no part of the college curriculum.

The old system of education was good of its kind and all that was possible under existing conditions. In a modified form it is useful nowadays to the few. It is essential to the professor in classics, or to the minister, literary student or advocate, but for the man or woman who enters industrial pursuits other training is necessary. Life has become so complex and competition so sharp that one must choose; there is not time for all, and the studies of the first 22 years

of life should develop deft fingers as well as trained intellects. Edison could never have made such a name for himself had he been purely theoretical or wholly practical. He is great because he has the power within himself to apply his theories.

I do not wish to be misunderstood. I believe in everything that educates—every college and school—denominational or non-denominational, sectarian or non-sectarian, public or private, but I do not believe that the old system of collegiate education is adequate at the present time. Before the middle of the last century thinkers realized the defects in the ordinary training provided for the young and a vigorous demand was made for a system of education adapted to the needs of the vast army of people engaged in the industries; for farmers, mechanics, business men and others. This agitation resulted in what has proven to be one of the most important measures ever adopted by the Congress of the United States, the Land Grant act of 1862, which provided for the appropriation of public lands to the several states, the apportionment being 30,000 acres for each representative and each senator then representing the states in Congress. The act provides that each state accepting the grant should use the funds for the “endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.”

Subsequent acts of Congress make additional appropriations for these institutions; the Hatch act of 1887 provides \$15,000 annually to each state for the maintenance and support of an agricultural experiment station, and the Morrill act of 1890 now gives \$25,000 annually to each of the land grant colleges. Under the terms of the several acts this

college receives annually from the national government the sum of \$44,800. The congressional promoters of this vast educational enterprise were building better than they knew and none of our heroes in peace or in war deserves more praise than they who in the darkest days of the nation conceived and executed the foundation plan for the higher education of the common people, the vast army of workers and producers of the industrial classes.

The Land Grant act of 1862 sounded the death knell to exclusiveness and aristocracy in higher education in America; it guaranteed the same privileges to both rich and poor; it placed the son of the farmer or mechanic on an equal footing with the son of the able jurist; it dignified labor; it enlarged and refined human activities and has given to all races, classes and castes the opportunity of a broad and useful life.

There can be no mistaking the meaning of the Land Grant act; it provides for the "liberal and practical education of the industrial classes." In its fullest sense it means the adaptation of college education to the lives of the common people. And what do the common people do? They engage in agriculture and the mechanic arts. It means then that if the colleges are to fulfill their mission they must make more of agriculture and mechanics—and all of the industries than ever has been made of them before.

During the 30 odd years of existence of the Land Grant colleges much has been learned about technical education. When the colleges were first established there were no precedents to follow. No courses of study had been tried. Trained men were not available as teachers and investigators and subjects which had never before been taught were to be offered. Is it any wonder that mistakes were made; that some thoughtful people questioned the success of the "New Education" as it was called and looked upon it as unpractical? It is interesting to study some of the first catalogues published; one may find a doctor of divinity as

professor of agriculture or a doctor of medicine as professor of mechanical engineering. The laboratory facilities and the instructional equipment of the time were extremely limited, both as to utility and variety, and usually consisted of a few patent office models donated by a congressman, with such other appliances as the instructor might invent. Courses of instruction lacked in uniformity, there being almost as great a variety offered as there were numbers of institutions.

Thirty years of experience in agricultural and mechanical education have brought order out of chaos. The doctors of divinity and medicine have quit teaching agriculture and mechanics. Their places have been taken by trained specialists, who know the scientific as well as the practical side of the work. The patent office models in the laboratories have been removed altogether or supplemented with new and improved machinery for construction or testing purposes; with chemical and with biological apparatus; with modern electrical appliances; with machinery for testing, separating and pasteurizing milk and cream and for butter and cheese making; apparatus for studying the physical properties of soils; score cards for judging live stock and well equipped greenhouses for the study of plant growth. Courses of instruction have been reduced to pedagogic form, remodeled and made more scientific and more practical.

For evidence of the remarkable success of these institutions we need only to look at the thousands of graduates scattered all over this broad land who are holding positions of trust and honor and contributing to the national life a cultured, refined and efficient citizenship. We find them on the farm, in the factory, in the mines and in all the vocations of life, and the demand today for this class of men is greater than ever before.

But what of the needs of New Hampshire for technical training? Is there need of a Land Grant college within

her borders? According to the census report of 1900 there is invested in our state in agriculture and manufactures alone the sum of \$186,771,757. This includes 30,000 farms with equipment and 4,617 manufacturing plants with lands and machinery. We have a population of 411,588 people, of whom 52.9 per cent. are engaged in gainful occupations. Of this 52.9 per cent. only 4.3 per cent. are in the professions, while 95.7 per cent., or a total of 208,367 people, are engaged in agriculture, manufacturing, mechanical pursuits, trades, transportation, domestic and private service. Again, it is probably safe to estimate that at least 3,000 young people enter upon active independent life in our state each year. Assuming this estimate to be correct and that 4.3 per cent. of them enter the professions, there are still remaining 2,871 who engage in industrial pursuits. Would not these thousands of serious-minded young men and women, annually starting out to make an independent living, be more successful as bread winners; would they not get more true enjoyment out of life, exert a wider influence on the community and take a more intelligent interest in the affairs of state if more of them had thorough training in the business upon which they enter?

I believe it to be the most important duty of this college to provide adequate training for these young men and women. Of course, the college also has the further duty of extending its privileges to citizens of the state who are unable to attend its courses of study.

In considering the question as to how the college may best discharge these duties, we have many complex problems to meet—problems which have engaged the profound attention of educators and men of affairs for more than half a century. Shall our courses of study be classical or literary, with only a seasoning of technical studies or shall they be technical with a seasoning of the classical or literary or shall we blend the two judiciously? Shall we make our standards of admission low, admitting any and all who

apply, or shall we make them high? Shall our courses of study be one, two, three or four years in length? These and many other questions are constantly before college authorities. In this connection we may learn much from the experience of our Land Grant colleges. They have demonstrated beyond doubt the practicability of higher training in the industries and also the great educational value of courses of study which combine technical, cultural and scientific studies. Today practically all of the Land Grant colleges doing an efficient grade of work offer two kinds of courses; the long four years' course and the short courses varying in length from a few weeks to two years. We may take as the model long course the one recommended by the committees on entrance requirements and methods of teaching of the Association of American Agricultural Colleges and Experiment Stations, which consists of one third culture studies, one third pure science and one third vocational studies. The culture studies include language, literature, social studies, art and mathematics. The pure science studies include physics, chemistry, botany, zoölogy, physiology, geology and meteorology. And the vocational studies dealing with practical subjects in agriculture or mechanics. With such a four years' course of study we may expect a graduate to have efficient training in the underlying principles of agriculture or mechanics and at the same time "a breadth and finish of culture comparable with that of the graduates from any other course." If the technical or vocational studies of the course overbalance the culture or science studies our graduate would have depth or narrowness of training at the expense of breadth. If the culture and science studies overbalance the vocational he would have breadth or superficiality of training at the expense of depth. What we desire, therefore, is that adjustment of studies and hours in the course which will give "depth without narrowness and breadth without superficiality." I believe that we should give much prominence to the long courses, for the reason that four years is short

enough time in which to give the necessary instruction in a sufficient number of cultural, scientific and vocational studies to fairly train a student for his life work. But what shall the college offer to students who cannot afford the time or money for a long course? To these we give the choice of two short courses, either the two years' course or a ten weeks' course. Thus far the demand for short courses has come almost entirely from farmers and hence the establishment of the above short courses in agriculture. In these courses much technical work is given at the expense of culture and science studies. The shorter the course the more strictly technical it is, and since a large proportion of young men in the state cannot afford the time or money necessary for the four years' course we should make much of the short courses.

In the extension of college influence to citizens of the state who cannot take our courses the experiment station work should play a prominent part. Every farmer in the state should receive our bulletins which are sent free of charge upon application. The station should conduct its experiments with special reference to their scientific and practical application.

Another important way in which our influence should be extended is through co-operation with manufacturers, transportation companies, the state board of agriculture, state and local granges, farmers' institutes, fair associations and other industrial organizations. These are the interests we serve and in order to render efficient service we must be in close touch with them.

We should regard the work of our college as only begun. Much has been accomplished but there is yet before us a broad field untouched by our influence. Our number of students is smaller than it should be. I have already referred to the 2,800 more or less of our young men and women who annually enter upon active independent life in agriculture, mechanics, manufacturing, trades, transportation, domestic and private service. Assuming that only

one fourth of this number are naturally fitted for college training and that those so fitted enter our college, we should have an entering class of 700 students each year and a theoretical total of more than 2,000. While we cannot expect to have this number of students for many years we may look for steadily increasing number from year to year. With increased numbers there must be provided more instructors, more class rooms and larger and better equipped laboratories.

We are also concerned with the broad problem of industrial training as it may be extended below the college to the secondary schools and above the regular college course to post graduate study. Industrial training began in the college but rapidly outgrew its confines and is now developing into an important system beginning in the secondary schools and extending up through the college to post graduate courses.

The question also arises as to whether the college is providing adequate training for young women. Since ours is the only college in the state which opens its doors to women, it is imperative that provision be made for their training. At present we offer them a general course, consisting of culture and science studies in which no technical work is given. The college does not recognize the important vocation of home keeping in which probably nine tenths of all our young women will engage sooner or later. This is the most important of the vocations since it directly affects the lives of all people. I regard it, therefore, as the duty of the college to provide, at the earliest possible date, a department of domestic science in which young women may receive instruction in the science, art and economics of home keeping.

Our college should be regarded as an essential part of the educational system which is rendering such magnificent service to the state. We rejoice in the grand work of Dartmouth College and in her increasing growth and efficiency. May she continue to have the prosperity she so

justly deserves. To our academies and private schools we give much credit for the work they are doing in supplementing public school instruction. Nor would we forget our splendid public school system which has the tremendous responsibility of training the youth of the state. We have, according to the school report for 1901-'02, the sum of \$4,155,615 invested in school buildings, apparatus and building sites. Our population of school age aggregates more than 100,000, with an average attendance of over 50,000 pupils, taught by 2,200 teachers. It is impossible to estimate the value and importance of the services rendered the state by her public schools. To all of these educational agencies we offer our encouragement and our support. We are each a part of the whole and, since the successful working of a machine depends upon the correct adjustment of all of its parts, it is essential that we all work together toward a common end. Our relations should be those of cordial co-operation. To borrow a phrase from the business world, there should be a "community of interest" in this vast educational enterprise of the state to the end that we may serve the greatest good to the greatest number.

Our college ideal, like other ideals, should be ahead of us, not behind us. It should be cast in the future and dominated by the spirit of research and investigation. We are concerned with the present and the future. The only interest we have in the past is the lesson it teaches concerning the future. The college which is perfectly content with the study of dead men's bones cannot be expected to lead in the march of progress.

Our progress should be marked by judicious conservatism and sane aggressiveness. Both are necessary. An over amount of conservatism would ballast our craft beyond the point of progress. On the other hand, undue aggressiveness, resulting in the hasty adoption of immature plans, with the disasters following would render our voyage perilous.

On those of us who are intrusted with the future of the college, from trustee to freshmen, there rest much responsibility. If the institution is to grow in usefulness and extend its influence to all parts of the state, there must be a unity of purpose combined with harmonious, aggressive action on the part of all of us. The college is young, but I think we all agree that it is a vigorous youth and full of promise. There should be nothing to hinder its rapid, healthy growth into that position of influence and power in the state which it deserves and which is demanded by the tremendous interests it represents.

ALUMNI ADDRESS.

BY H. L. BOUTWELL, CLASS OF 1882.

The invitation to represent the alumni on this occasion came to me as somewhat of a surprise. I am frank to say that I had been led to believe that one who had left the granite hills of New Hampshire to work out the battle of life at the metropolis of New England, especially one who had departed widely from, not the "path of virtue" exactly but from the path of virtue as laid down in the curriculum of this institution, would hardly be welcome on an occasion like this. I am now satisfied that the belief for so long cherished was erroneous and I am glad to say that I now believe that any graduate of the New Hampshire College of Agriculture and Mechanic Arts, living an honest life, no matter where or what his vocation may be, is welcome here.

I am called upon to represent the alumni. I can only represent that portion of the alumni which knows not Durham. 'Tis 24 years since Mrs. Pettee taught me how to beat and lay carpets at ten cents per hour. 'Tis 22 years since I struggled with sines and co-sines, tangents and co-tangents and felt the gleam of Professor Pettee's piercing eye resting on me when I tripped. And 'tis 21 years since Professor Scott, with sardonic smile, applied a blue pencil to my last thesis. I suppose that he sits here now wondering whether or not I have profited by his criticisms, and I am wondering whether, when I shall have finished, his pencil point will drop in the upper left or the lower right-hand corner of the marking card.

Three hundred and eighty were students at this college while it was located at Hanover. Of these 156 graduated. Thirteen are dead. The remaining 143 are scattered

through 22 states and territories. They may be found as far south as Texas and Louisiana and as far north as Alaska. Some are located on the Atlantic coast, some on the Pacific and nearly every state between has one or more graduates of the New Hampshire College. New Hampshire has the greatest number—about 25 per cent. Massachusetts is a close second.

The vast majority are engaged in occupations directly or indirectly relating to agriculture and the mechanic arts. Agricultural pursuits claim the attention of about 30. There are 13 doctors, five lawyers and one clergyman.

Many have pursued the goddess of learning since leaving college and 33 at least have received degrees from various post-graduate and professional schools.

A somewhat similar statement might be made as to the doings of those who have graduated during the last ten years, except that they have apparently not been attracted by medicine, law or theology. I was surprised to find that since the coming of the college to Durham the so-called learned profession no longer gather in our graduations. I know of no doctor, lawyer or minister since 1893. In the early days we knew not the value of a college president, for we had none in fact, although a name may have appeared in the catalogue. We are here today to help inaugurate a president of the college, but we shall not attempt to give advice. We will simply say that from all the information obtainable we are satisfied that the trustees have acted wisely in their choice of president; that he enters upon his duties with our best wishes and that he may depend upon our cordial support.

But a college president was not the only missing essential at Hanover. We did not have a football team; our baseball team had a precarious existence and basketball had not then been discovered. During my time the faculty consisted of four professors, Blanpied, Pettee, Scott and Jesup. In addition we had an instructor in free-hand drawing, a short course in elocution and a few lectures on agri-

culture by Jere Sanborn. I can remember nothing else. Today the catalogue shows that we have a president, nine professors, six associate professors and seven instructors, a total of 23.

I devoted an afternoon, not long since, to looking over the college buildings and equipment here at Durham. The only familiar thing that I saw was a chemical laboratory, which Professor Parsons assured me was used for elementary work only. We had only one laboratory. In addition to the laboratory we had a chemical lecture room, a general lecture room and two recitation rooms. And these, to a large extent, were shared with Dartmouth. You know what is here. When the 500-light dynamo, in yonder building, was pointed out to me, I was reminded of the way we had of generating electricity in 1881 and '82. We did it by turning a crank.

I never saw the inside of a workshop while in college, although Professor Pettee tried to convince me that there was one as early as 1882.

In spite of the meagerness of the equipment, we had students who were desirous of obtaining an education. We also had a few earnest, energetic, hardworking professors, who took a real interest in their work and had real consideration for the welfare of the students under their charge. Two of those professors are now with us. I want to say here and now that the institution and the alumni owe much to Professor Pettee and Professor Scott.

We, of the earlier times, appreciate and are grateful for the instruction which we received and which many of us would not otherwise have had. We are still more grateful for the ambition which was developed within us during our connection with the New Hampshire College. My experience there led me to the conclusion that any bright boy, no matter how poor, with pluck, ambition and good health and without incumbrances, can obtain as good an education as he desires. My experience since has only served to confirm that conclusion. It was my privilege for ten years

to be the principal of a large evening school in the city of Boston. One of the attorneys in the recent gas contests in the courts of Massachusetts was a pupil of mine at that school. He was an office boy by day and a student by night until the goal of his ambition was reached. In 1886 a little Italian boy came to that school. His knowledge of the English language was exceedingly defective, for he had recently landed in this country. He was poor in this world's goods, but ambitious. A few years later a young man came into my office and laid down a card, reading: "Frank M. Zotto, Attorney-at-Law." His own unaided efforts had given him a liberal education. One graduate of this school was obliged to labor for the benefit of his father's family until he was 21 years of age. He then started out to get an education. He secured a B. S., later a C. E. and now has a salary of \$5,000 per year.

But let me say plainly that for a poor boy to satisfy such an ambition is no easy task. It means that he must work while others play; that he must study while others sleep, and his eye must be kept steadfastly on the goal to be attained. He must pay the price if he would secure the prize.

But I am digressing. This savors more of the academic than of the practical and scientific. Yet, what is to be expected from one whose ambition was fired within the classic shades of old Dartmouth. And further, when I was a student, the value of the training to be secured in an institution like this was not appreciated by the people of New Hampshire. When I returned home from my first term, a prominent farmer said to me, in a sarcastic vein: "Can you hoe corn any better? Can you swing a scythe any faster?" Since then conditions have changed. The farmers of New England are beginning to realize that the successful agriculturist of the future must depend more upon brains and less upon brawn. The alumni of this college have clearly demonstrated the value of the instruction here given and their ability to take and hold commanding position in the industrial world.

The United States of America is beginning to realize how much of her glory is due to the success of her people along the lines of agriculture and the mechanic arts. Until the Spanish War I did not fully realize the wisdom of the act of Congress of 1862, intended "to promote the liberal and practical education of the industrial classes." A glance at the history of our country cannot fail to make this clear.

One hundred and twenty years ago this nation consisted of 13 states, a narrow strip of land along the Atlantic, its people without wealth, but strong, rugged, energetic and liberty loving, the mere nucleus of a nation. Its growth has been marvelous. It has no parallel in the history of the world. Encouraged by wise legislation westward went—not the lawyer and statesman but the pioneer, farmer and mechanic—forerunners of development and civilization. The closing years of the nineteenth century found our fertile fields under cultivation; our mineral wealth developed; the banks of our power-giving streams dotted with factories; iron horses racing across 3,000 miles of continent, powerful steamers plying our great lakes and rivers; our people educated, industrious and peace-loving; our population multiplied fourteen fold; our wealth almost beyond measure; our government tested by the severest strain that can come to a nation and not found wanting. All this, and yet the world knew not our power, our wealth, our resources or our people. At length the results of an age of scientific and industrial progress were to be tried in the crucible of war. You know the result. It is not my desire to belittle the meritorious work of our army and navy, but let me say that without the commissary the army could not long exist; that the gun maker is as important as the gunner; and the builders of the navy deserve as much credit as the commanders. The Spanish War, in my opinion, was a far better exemplification of industrial and mechanical skill and development than of military and naval prowess.

But, be that as it may, the twentieth century found the

United States of America with a population of 85,000,000 and the most powerful country in wealth, resources and mechanical skill in the world. Today, American pluck and energy is recognized the world over. American skill and workmanship is unsurpassed. The *Oregon*, an American man-of-war, built of American steel and by American labor, steamed 8,000 miles around Cape Horn without starting a bolt or loosening a rivet; participated in the destruction of Cervera's fleet, started almost immediately back to the Pacific and for Manila and upon her arrival Admiral Dewey cabled back this message, "The *Oregon* has arrived and is now ready for any duty." American engineers are now constructing cable and electric lines in such far-away places as Belfast, Ireland, Sidney, N. S. W. They competed for and built the great steel bridge in Egypt. The Trans-Siberian Railway is laid with Pennsylvania steel rails, upon ties from Oregon and the trains are drawn by American locomotives. That great railroad from St. Petersburg to Port Arthur, 6,000 miles in length, was completed two years before the expected time by means of improved American tools and machinery. Russia has 1,000 American locomotives, Japan 100, and every railroad in Great Britain has ordered them.

In agriculture, too, the United States leads the world, her products exceeding those of the United Kingdom and Russia combined.

With such conditions existing in the land there must be ample room for the products of this institution and of all others intended "to promote the liberal and practical education of the industrial classes."

With these elegant buildings, this up-to-date equipment, this beautiful location, a real live president, a corps of able and earnest instructors and harmony prevailing along the line, it would seem that the New Hampshire College has a great future before it.

DEDICATION OF MORRILL HALL.

DEDICATORY ADDRESS BY A. C. TRUE, DIRECTOR OF THE OFFICE OF EXPERIMENT STATIONS, UNITED STATES DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C.

THE NEW AGRICULTURAL EDUCATION.

The new president installed today and the new building now being dedicated are representative of a wide, forward movement in agricultural education. As an officer of the government maintained by the people of the United States I am here to congratulate the state of New Hampshire, because she is joining her sister states in making more liberal and adequate provision for the instruction of her youth in the science and art of agriculture, thus redeeming in ampler measure the pledge given years ago to the United States to maintain a college in which agriculture should be a leading subject of instruction.

Within the last three years I have been in every state and territory of our Union, and everywhere I have found largely increased interest in agricultural education. New buildings, better equipment, larger facilities, more students—this is the almost universal record of our agricultural colleges. It has been a period of great material prosperity. Agriculture has participated in the success which has come to all our industries. Public revenues have increased and Legislatures have been more ready than ever before to spend the surplus for education, especially along industrial lines. And, what is the most significant thing, the representatives of agriculture, instead of holding back with an ultra-conservatism as of old, have been active in pressing the claims

of agricultural education and insisting that it shall be established on a strong and liberal basis. The full explanation of this change of attitude respecting agricultural education it would perhaps be difficult to make. Undoubtedly various causes have contributed to the general result. But one very important factor in this problem has been the realization, at least by the leaders in our agricultural progress, that a radical change has in recent years been made in the foundations of our system of agricultural education and that these foundations are now of a substantial and enduring character.

For many years after the establishment of our agricultural colleges it seemed impracticable to formulate any well defined system of agricultural education. The agricultural courses in these colleges consisted very largely of the teaching of the general principles of various natural sciences and the applications of these sciences in a limited way to the art of agriculture. Agriculture itself was treated as a single branch of study and the attempt was often made to deal with it simply as a manual art, which might be taught by instructors without special scientific training. The result of this was that the students became fairly good chemists or botanists or zoölogists, and looked upon the college farm as a place where they encountered the same drudgery to which they had been accustomed at home.

It is no wonder that under these circumstances agricultural education fell into disrepute and received comparatively little attention. But meanwhile, through the establishment of agricultural experiment stations and similar institutions in Europe, and later in this country, systematic researches along agricultural lines were being prosecuted in ever-increasing variety and amount and thus the materials were being collected for a real science of agriculture. Naturally for a considerable period the full effect of this was not felt in our system of agricultural education.

With the organization of the experiment stations in connection with our agricultural colleges there was more spe-

cialization along scientific lines and we thus had more of agricultural chemistry, economic botany, vegetable pathology, zoölogy, entomology, bacteriology, etc., in our agricultural courses. Agriculture was now more often divided so as to provide special instruction in horticulture, but this was still on a so-called practical basis. Gradually, however, it became apparent that something more than the teaching of the routine methods of their art was expected of agriculturalists and horticulturalists and that out of the materials which the experiment stations were collecting might be constructed a systematic scientific explanation of the processes and phenomena of agriculture. And now the colleges are awakening to something like a clear appreciation of the fact that there is already a body of knowledge which may fairly be called the science of agriculture, and that it is possible and highly desirable to base the whole system of agricultural education on the science and art of agriculture itself, rather than on the sciences related to agriculture. It is this fundamental change of viewpoint which is causing a radical reorganization of our agricultural colleges and has given a renewed vitality and even a great enthusiasm to the promotion of agricultural education throughout the length and breadth of our land.

So recent has been the definite formulation of the new program of agricultural education that the public, and even the managers and faculties of our agricultural institutions, do not yet fully appreciate its significance, though its first results may already be apparent in their midst. It is therefore appropriate on such occasions as this briefly to explain what is meant by a science of agriculture and indicate how the acceptance of this science as the basis of agricultural education affects the organization of a system of education related to agriculture.

The science of agriculture may be defined as that body of knowledge (gained and verified by exact observation and correct thinking, methodically formulated and arranged in a rational system) in which the facts relating to the pro-

duction of plants and animals useful to man and the uses of those plants and animals are accurately set forth, and a rational explanation is given of the phenomena and laws involved in such production and uses.

Agriculture, as the science of the production and use of plants and animals useful to them, may be divided into plant production, animal production or zoötechny, agricultural technology, rural engineering and rural economics.

Under plant production is included whatever relates to the natural or artificial environment (*i. e.*, climate, soil, water, fertilizers) of useful plants, their structure composition, physiology, botanical relations, varieties, geographical distribution, culture, harvesting, preservation and uses, and the obstructions to their growth, preservation or use. Plant production may be subdivided into agronomy, which deals with what are commonly called field or farm crops, horticulture, which deals with vegetables, fruits and ornamental plants, especially as grown in gardens, small plantations or parks; forestry, which deals with trees and shrubs grown in large tracts.

The second great division of the science of agriculture is animal production or zoötechny. This includes whatever relates to the anatomy, physiology, zoölogical relations, domestication, types and breeds, breeding, feeding, hygiene, management and uses of useful animals. It may also include the science which treats of diseases and other impediments to the production of animals, *i. e.*, veterinary science, though this is in itself a large and distinct body of knowledge and bears only the same relation to zoötechny that the science of medicine bears to anthropology.

Agrotechny includes whatever relates to the conversion of raw materials produced in agriculture into manufactured articles for use in commerce and the arts. It may include the processes of handling these raw materials in connection with their commercial uses, as in the case of milk and cream sold for consumption. It also includes whatever relates to departures from standards set for manufactured articles, *i. e.*, adulterations and sophistications, in somewhat the same

way that the diseases of plants and animals are related in agronomy and zoötechny. Agrotechny is naturally divided into specialties to the kinds of materials, *e. g.*, feeds and feeding stuffs, liquors, oils, textiles and leather. The subdivision of the most importance as a subject of school instruction in the United States is dairying.

Rural engineering includes those branches of civil and mechanical engineering which relate to the locating, arranging and equipment of farms and the construction and operation of farm implements and machinery. It embraces the surveying of farms, the location of farm buildings and works, the construction of buildings, water, irrigation, drainage and sewage systems and roads. It also involves the principles of mechanics as applied to farm machinery and the use of different kinds of power for agricultural purposes.

Rural economies may be more or less broadly defined according to the point of view. It at least includes whatever is related to agriculture considered as a means for the production, preservation and distribution of wealth by the use of land for the growing of plants and animals. It may include the development of agriculture as a business (history of agriculture), as well as the facts and principles of farm management under present conditions.

All questions regarding the exact boundaries of the science of agriculture or of its subdivisions sink into insignificance when compared with the substantial fact that there is a rapidly increasing body of knowledge which fairly constitutes a science of agriculture and that by organizing our colleges of agriculture, experiment stations and department of agriculture on the basis of this science we may secure such increased efficiency of work and administration as will greatly widen the scope and thoroughness of this science, and through its effective application to practice in an ever-increasing number of ways, do more to improve the art of agriculture than would ever be possible as long as there were simply fragments of knowledge regarding agricultural subjects scattered through a score of sciences.

This fact has lately been recognized in the reorganization of the United States Department of Agriculture, where we now have bureaus of soils, plant industry, forestry and animal industry, in which are grouped a large number of scientists representing various specialties in agricultural science. These men now feel that they are working primarily as agricultural scientists rather than as botanists, chemists, physicists or physiologists. Their natural outlook is therefore in the direction of promoting the advancement of agricultural science and practice, and they are disposed to lay under contribution every science required to work out the complex problems of agriculture.

A notable instance of the important results which may follow the reorganization of a college of agriculture on the basis of the science of agriculture may be found in the recent history of the college of agriculture of the University of Illinois. In 1895, this institution, according to the official report made by the dean of the college, was practically declared a failure, its property was almost entirely sold "and teaching was mostly abandoned, for the only instruction given in agriculture was during the winter months, at which time the few regular students, less than a dozen, were put into the short course classes." But through the faithful and arduous labors of its officers and the co-operation of the agricultural organizations of the state, a crisis was at last reached. The Legislature, without a dissenting vote, appropriated \$150,000 for a new agricultural building and the agricultural courses and faculty were reorganized on the basis of the science of agriculture. In February, 1903, the dean of the college reported that only four years after entering upon this new lease of life there were 20 officers giving instruction in the college of agriculture. At that time there were in attendance 259 students in this college, an increase of more than ten-fold in four years. Seventy-nine separate and distinct courses of instruction in different branches of agriculture are offered by this college. "In place of classes of one or two students, as in the old days,

we now fill classrooms. There are classes of over 100 meeting today. All the work is aimed directly at profitable farming, and the best proof of this is that our students almost invariably go to farming for themselves and are seldom available for salaried positions. * * * It has been abundantly proved that Illinois boys would come to the agricultural college when there was something to come for and not before." The Illinois experiment station has also largely increased its work with the aid of funds given by the state.

Similar statements might be made regarding other institutions wherever a serious attempt has been made to build up a real agricultural faculty and base the organization and work of the college of agriculture on agriculture itself. Along the change in the basis of agricultural education has come the realization that such education cannot be put on a sound pedagogic footing until there is a proper grading of the courses of instruction in this as in other subjects. Our system of agricultural education began with the agricultural college. This was perhaps necessary, because the task of training leaders in agricultural progress was fundamental. But the effort to satisfy the needs of various classes of students through these colleges has necessarily been only partially successful. And the public, disappointed because these institutions are not directly educating large bodies of our rural youth, and not understanding the limitations by which the colleges have been bound, has often been inclined to pronounce them failures. But this is not so. With all their imperfections the agricultural colleges, most of which have been in active existence through only a single generation, have accomplished a large work. From them have come in large measure the men who have made the science of agriculture, who have manned the experiment stations, who have brought about changes in our agricultural practice which have largely increased production, and, what is more important, have set our intelligent farmers on the highway of rational progress. Those men

have also laid the foundations for a system of agricultural education which is already affecting the thought and activity of hundreds of thousands of farmers who never have been on the campus of an agricultural college and which in the not distant future will directly touch the masses of our rural population.

For the leaders of our agricultural progress have learned and the general public will soon learn that the agricultural college is not the only institution required to give us a thoroughly effective system of agricultural education. And already representatives of the different institutions comprised in a comprehensive system of agricultural education are actually in operation in different parts of the country, so that we can now clearly understand what the American system of agricultural education is to be. Briefly outlined, this system will include, (1) agricultural experiment stations (*i. e.*, institutions of research); (2) graduate schools; (3) colleges; (4) secondary or high schools; (5) special schools (of dairying, etc.); (6) elementary courses in the common schools, and (7) extension work, especially farmers' institutes.

Agricultural experiment stations are in active operation in all our states and territories. These, combined with the national department of agriculture (which is largely a vast experiment station) constitute a system of agricultural research which, in resources, extent and scope, is without parallel in the world.

Graduate instruction in agriculture is given in a number of universities and colleges in different parts of the country and a national graduate school of agriculture has already had one session.

All the states and territories have agricultural colleges.

Agricultural secondary or high schools as public institutions are in operation in Minnesota, Wisconsin, Nebraska, Oklahoma, Alabama, Rhode Island, California and Missouri; many of our agricultural colleges maintain courses of this grade and private institutions in several states have such courses (*e. g.*, the academy at Northfield, Mass.).

Special schools of forestry, dairying, animal husbandry, poultry-culture, sugar-making and veterinary medicine are maintained in a number of states.

Nature study based on agricultural topics is already taught in many country schools.

Various forms of extensive work, such as correspondence courses, reading clubs and experimental unions, are being successfully operated under the leadership of our agricultural colleges. But the greatest of these movements is found in the farmers' institutes. These are maintained under state authority, the agricultural colleges are largely participating in this work and now the national department of agriculture, through its office of experiment stations, is actively promoting their co-ordination into a great national system for the education of our adult farmers. Last year 2,700 institutes were held in 43 states and the aggregate attendance was about 1,000,000.

Looking at our system of agricultural education in this broad way and remembering that our agricultural colleges are largely responsible for the development of this system in its entirety and for the measure of success which it has already attained, and then comparing this with the limited number of workers in these colleges and the comparatively small resources at their command, I believe we shall be filled with wonder at the greatness of the results which they have already accomplished. But, best of all, they have laid the foundations of a much wider success in the future, for we have now reached a point from which we can advance with the certainty of rapidly accumulating triumphs for the cause of agricultural education. But let us look a little closer at certain features of this system on which, in the brief time at my command today, I wish to lay especial emphasis.

The agricultural experiment station is in this country ordinarily organized as a department of the agricultural college. It is a research department. Its chief business is to find out new applications of science to agriculture which shall result in improved practices and products.

Experience has shown that to do its most effective work the station must closely hold to accurate scientific methods and get at underlying facts and principles. For this reason it must not only have on its staff thoroughly trained experts, but these men must also have their time at their disposal for thorough work of research and must have the best equipment which can be secured to promote the ends they have in view. On their success depends not only the advancement of agricultural practice in particular regions but also the effectiveness of the agricultural colleges and other institutions for agricultural education. For it is the new knowledge which the stations are gathering through their researches that is required to strengthen and develop the courses of instruction in agriculture. These stations are the fountains from which will flow the streams of knowledge that on the one hand will make our farms more productive and on the other hand will give our youth sound training in the correct principles of agriculture. It is gratifying, therefore, to observe that in the building which we dedicate today distinct provision is made for the work of the experiment station.

Thus the state of New Hampshire is making good the virtual pledge which it made years ago to co-operate with the United States in maintaining its agricultural experiment station on an efficient basis. And without doubt the state will follow up this enlargement of the material requirements for agricultural research with increased attention to the human elements of success in this enterprise. In these improved laboratories we shall expect to find well-trained experts with ample time at their command to make the most thorough research for the benefit of the agriculture of New Hampshire, some of the results of which no doubt will be of wide application in the agriculture of other states.

Turning now to the courses of instruction in the agricultural college, we find in some respects a much more perplexing problem. The term college as employed in New England used to stand for an institution quite definite in character. But in these days great and radical changes are

going on in all our colleges, our educational leaders are much at variance regarding their plans and functions in our educational system and it is even claimed in some quarters that the college as a distinct institution is destined to disappear. But along with the expansion of subjects taught in our colleges, with the almost universal adoption of the elective system, with the breaking down of the barriers between pure and applied science, there is the more definite recognition of certain wide graduations of courses of instruction and the establishment of standards of attainment on a broad basis. Thus we are coming to a fairly clear demarcation of elementary and secondary education and above this to the great desirability of a fairly uniform standard for collegiate and university degrees.

The course of instruction in an agricultural college may easily be so grouped that the graduate in agriculture may have a truly liberal education. This is well illustrated by the course of study proposed for our agricultural colleges by standing committees of the Association of American Agricultural Colleges and Experiment Stations. This four-year course includes English, modern languages, psychology, ethics, political economy, general history, constitutional law, drawing, algebra, geometry and trigonometry as culture studies; next there are the pure sciences—physics, chemistry, botany, zoölogy, physiology, geology and meteorology; lastly, the vocational studies—agriculture, horticulture and forestry, veterinary science and agricultural chemistry. As regards the time assigned to these subjects, we find two thirds of the entire course is occupied with culture and scientific studies, leaving one third of the time for agricultural science and its applications to the arts of agriculture.

It is now possible to make the agricultural college course leading to a bachelor's degree as sound and thorough pedagogically as any other course and I believe it is wisest to do so. I know that if this is done the number of persons receiving this degree will for some time in many of our states be relatively small. But we have now reached a

point in the development of our system of agricultural education where it is highly desirable that the public, and especially the farmers, should be taught to make proper distinctions of grades in agricultural education.

It should be clearly understood that the agricultural college course leading to a bachelor's degree will call for an amount of learning which can only be acquired by years of close application to study. It is therefore not for every boy, any more than any other college course, but only for those whose ability and tastes shall lead them to devote themselves to a large educational effort. As managers of our larger agricultural enterprises, investigators, teachers, journalists, government and state officers, manufacturers of fertilizers, farm machinery and other products resulting from or used in agriculture, we need in the aggregate a large number of men who have received thorough training in the science and arts of agriculture. These men should be trained in our agricultural colleges and should at least attain the bachelor's degree. Already there are profitable employment and honorable careers for more men of these classes than our agricultural colleges can supply and the demand for these graduates in various capacities is rapidly increasing.

But when the college course in agriculture is put on a proper basis and we have ceased worrying about the number of graduates from this course, there will still for many years be much other work which the agricultural colleges will have to do. For it will be their task very largely to organize and put on a permanent foundation the lower grades of agricultural instruction. They will be required to engage largely in extension work and especially in the farmers' institutes. They will be called upon to aid in the training of teachers and the supplying of books and illustrative materials for the elementary nature-study courses. But those things are outside enterprises and will only incidentally affect the work at the college itself.

As regards the special schools and the agricultural high schools, I believe that the colleges will have to develop these

institutions very largely under their own direct supervision.

In many of our states, if there are to be successful schools of dairying, horticulture, forestry or any other branch of agriculture, they will have to be organized as a part of the agricultural college. And the same is probably true of the agricultural high school. Such an institution is the crying need of our rural communities. When the farm children are through with the district schools they should not be compelled to go to town or city high schools where agriculture is entirely neglected. They should be provided with schools similar to the normal training high schools maintained in many of our cities, in which, along with culture and scientific studies, the theory and practice of agriculture shall be systematically taught.

Ultimately I believe these secondary agricultural courses will be supplied in many high schools in or near the rural communities, but there will always be room for a limited number of separate agricultural high schools. In these secondary schools in the future is to be given most of the agricultural instruction which will be directly reduced to practice on the farms.

To show what this secondary instruction really means, to gather about it a considerable number of youth who will return to the farms, to thus provide an ample recruiting ground for its college courses, I believe that most of our agricultural colleges can well afford to organize in their midst an agricultural high school. Many of them are actually doing this in an imperfect way through short, special or preparatory courses, but a better effect would be produced if this work were organized distinctly on a high school basis and thus the public taught to differentiate properly the secondary from the collegiate instruction in agriculture.

It may perhaps be said that this is a large and expensive program. But agriculture is making no unreasonable demands. She is only asking the same treatment which is already accorded other arts and professions. The clergymen, lawyers and doctors receive their education very large-

ly at public expense. Schools of technology and courses of manual training are being rapidly multiplied as parts of our public school system. The city schools in ever-increasing measure directly prepare their pupils for the pursuits of urban communities. The farmer is not to be deprived of similar privileges along the lines of his art. The republic cannot afford to maintain the great fundamental industry of agriculture on the basis of ignorance and conservatism. Reckoned at their lowest value, the public funds spent in technical education, whether in engineering, trades or agriculture, are most profitable financial investment. But they pay vastly richer returns in the broader mental outlook and higher morality of the educated masses.

In other ages and countries the farmer has been a stupid peasant, the legitimate prey of the baron and the merchant. In the modern world the manufacturers and the financiers await with anxious solicitude the annual outcome of his labors and the politicians hang in breathless anxiety on the announcement of his verdict. The farmer in this country is now sufficiently awake to his own interests to understand that, independent as he is in many ways, he cannot afford to stand apart from the great world and he is therefore taking more and more advantage of the means of communication with his fellow men. The rural free delivery and the telephone are putting him in close touch with the markets and the thought of the world.

A recent issue of the Washington *Evening Star* puts the result thus: "It is estimated that half a million farmers have telephones in their houses. The old idea of the farmer as a man who whittled pine sticks and chewed tobacco is disappearing. The successful farmer today must be a business man." And he demands and will have an education suited to the requirements of his business and social life under the conditions of his new environment.

While acknowledging all this as regards the agriculture of the United States as a whole, some people have had the idea that the agriculture of New England is gradually disappearing and will ultimately be extinct. A most absurd

idea! The agriculture of New England has undergone great changes in the past half century. It has passed through a period of depression while the great Mississippi valley was being occupied and its vast prairies were almost as free as air to the settlers. But that day is gone, for the lands of the Mississippi valley are filled with farmers. Irrigation will ultimately put under the plow millions of acres west of the great river, but this development will necessarily be slow and expensive, even with national aid. The natural increase of population, the great tide of immigration, the growing demands of the old world for food to stop the hunger of its teeming millions—all these things are to make our agriculture more remunerative and to bring into more profitable use of lands of New England, as well as of the rest of the country. According to the United States census, in the period between 1890 and 1900, the annual value of the farm products of New Hampshire increased from less than \$13,000,000 to nearly \$22,000,000.

And even now, and in the days to come in far greater measure, it is the trained farmer who will make the best living out of New England soils. For here will flourish an intensive and highly specialized agriculture. The forests are to be reconstructed and profitably utilized as a permanent source of wealth. Horticulture, dairying and poultry raising—pursuits which call for a rare combination of scientific knowledge and practical skill for their most profitable development—are to make the restricted fields of New England far more productive than many broader areas beyond the Alleghanies. But these highly specialized and developed agricultural industries must rest on a basis of scientific and technical education if they are to have great and enduring success. To bring this about is the mission of the agricultural college. It is a great task and a tremendous responsibility. In the older lines of education the college has a quite restricted duty and the methods of its work are relatively fixed so that its managers and faculty have a comparatively easy burden to bear. But the managers and faculty of an agricultural college

of the present day must not only teach the students whom they can draw into their classrooms but they must also gather out of the realms of the unknown the materials to complete the new science of agriculture on which the scheme of education rests; they must organize and bring into successful operation a whole system of education from the common schools to the university department of research; they must overcome the prejudices and traditions of a most conservative constituency; they must create and develop into active and permanent life a public sentiment which shall result in the adequate equipment and maintenance of a comprehensive system of agricultural education. It is indeed a great burden which rests upon the shoulders of this board of trustees, this youthful president and this learned faculty.

But the encouragements to strenuous activity in this case are also great, for already mighty forces are allied to push on this enterprise. The United States government has pledged itself to the permanent financial support of the agricultural colleges and experiment stations and is giving them besides the active aid of its great department of agriculture. The state of New Hampshire is backing this work with its public revenues, and this building testifies that the state regards the agricultural college as one of its permanent institutions. The workers in the cause of agricultural education here have also those incitements to high endeavor which come from the consciousness of belonging to a great system of institutions, that throughout the length and breadth of the Union and in all civilized countries of the globe are competing in generous rivalry for the advancement of fundamental interests of mankind. And what is most significant and stimulating is the systematic and active aid of rapidly increasing hosts of intelligent farmers and other public-spirited citizens who individually and through their organizations are helping to make the agricultural college what it should be and develop a system of agricultural education which shall ere long reach every man, woman and child on the 5,000,000 farms of the United States.

THE GROWTH AND DEVELOPMENT OF THE NEW HAMPSHIRE COLLEGE OF AGRICUL- TURE AND THE MECHANIC ARTS.

BY HON. JOSEPH B. WALKER, PRESIDENT OF THE STATE
BOARD OF AGRICULTURE.

No words of mine, Mr. President, can make any important addition to the grand papers to which we have listened to-day. Well for us will it be if we remember and reflect upon the important facts which they have so lucidly set forth.

Such papers could not have been written a generation ago. The contrast of that time with the present awakens in my mind a vivid remembrance of the birth of this institution in 1866, which came about in this way:

The Congress of the United States had passed an act four years before to encourage the establishment of colleges of agriculture and the mechanic arts, which received the approval of the president on the 2d day of July, 1862.

In accordance with one of its provisions, New Hampshire was entitled to a gift of 150,000 acres of land if, within five years, she would provide "at least not less than one college as described in the fourth section of this act," and that, upon failure to do this, "the grant to such state shall cease."

This generous offer awakened no great interest in the minds of our people and, strange to say, the least perhaps among those whom it was especially designed to benefit. One, two, three and almost four of its five years passed away and one Legislature after another had taken no action to meet this condition. A few individuals, however, in

various parts of the state appreciated the value of the offer and when the General Court assembled in 1866 several of them were found to have been returned as members, possessed of a determination to secure, if possible, this boon to the farmers and mechanics of the state.

The Legislature assembled on the sixth day of June and the next day Governor Smyth thus alluded to the importance of early action in relation to this act, saying in part:

“The act of Congress granting public lands for the purpose will expire by limitation on the second day of July, 1867. Immediate legislation will therefore be required to avail ourselves of its provisions. The state has received the script for 150,000 acres, valued now at a little less than 60 cents an acre and not likely to increase in worth for a considerable time, nor is it probable that the aggregate receipts can, in any event, exceed \$100,000. With this sum, it would be obviously impossible to found an independent college, with its professors and libraries, with its buildings and requisite apparatus, such as would do honor to the state and be of real benefit to the sons of its citizens.

* * * * *

“The offer of Congress having been accepted (July 9, 1863) by the Legislature, its intention must be carried out in spirit and letter. As a college, then, either on an independent foundation or in connection with another, we must accept the offer.”*

Some three weeks after (June 26) the Legislature had come together, Mr. Bailey of Lyme introduced to the House a joint resolution for the establishment and location of the contemplated college at Lyme, in accordance with provisions in the will of David Culver, who had died the year before, offering his farm for its site and \$30,000 towards its support, provided it be located in the town of Lyme.

This resolution was referred to a special committee on an agricultural college, which had been previously appointed (June 14), consisting of Joseph B. Walker of Concord,

* House Journal, 1866, pp. 35, 36.

Asa P. Cate of Northfield, Ellery A. Hibbard of Laconia, Dexter Richards of Newport, William H. Haile of Hinsdale, Hosea Eaton of New Ipswich, George W. Murray of Canaan, Ezra A. Stevens of Portsmouth, Wolcott Hamlin of Dover and Isaac Adams of Sandwich.

On the 27th of June this committee reported, in a new draft, a bill, an important feature of which was the establishment of the proposed college at Hanover in connection with Dartmouth College; to be there maintained under the general control of nine trustees to be appointed from time to time, five by the governor and council and four by the last named institution; the terms of connection to be mutually settled by the trustees of the respective colleges.

This bill was very earnestly opposed in the House but was finally passed, upon a call for the previous question, by a very large majority on the fifth day of July. It encountered no opposition in the Senate where it was passed on the sixth and received the governor's approval the day following. Not long afterwards nine trustees were appointed by the state and by Dartmouth College. Those appointed by the state were Joseph B. Walker of Concord, John D. Lyman of Farmington, John B. Clark of Manchester, William P. Wheeler of Keene and Chester B. Hutchins of Bath. The trustees appointed by Dartmouth College were Asa D. Smith of Hanover, Frederick Smyth of Manchester, Ira A. Eastman of Concord and Anthony Colby of New London.

These met on the 28th day of September and organized their board. By action taken later the terms of a connection of the new institution with Dartmouth College were agreed to and a contract, drawn in accordance therewith, was executed on the 4th day of June, 1867.

The next work entered upon was the appointment of a faculty of instruction. It very soon became evident that professors of agriculture and the mechanic arts existed in very small numbers, if at all. The nearest such, whose services could be obtained, were persons willing to qualify

themselves as soon as practicable for the work required. It was further discovered that the necessary text books on many of the proposed studies had not then been written and still further that the entire income of the endowment fund was but \$4,800 a year.

Under these circumstances it was decided to appoint only a professor of general and agricultural chemistry and depend upon the faculty of the older college for instruction in such other branches as might be found necessary. To this professorship Ezekiel Webster Dimond was elected April 28, 1868. He was a graduate of Middlebury College and had been for several years a teacher of chemistry. He had also been turning his attention to applied chemistry and had published an important treatise upon "The Chemistry of Combustion as Applied to the Economy of Fuel, with Special Reference to the Construction of Fire Chambers for Steam Boilers."

At this time Mr. Dimond was in Europe, making investigations on lines pertaining to his chosen profession. When apprised of his appointment he returned from abroad and was present at Hanover in season to make all necessary arrangements for the opening of the new college in September, 1868.

At that time the New Hampshire College of Agriculture and the Mechanic Arts began its career. Unaided by American precedents, without a single rod of land or a single building; with an insufficient endowment fund and few, if any, text-books on agriculture or the mechanic arts, on the fourth day of September, 1868, it opened some rented rooms for the first time to ten students of good moral character, who had previously passed satisfactory examinations in English grammar, geography and arithmetic. A visit by your speaker, about this time, to Hanover disclosed the fact that the New Hampshire College of Agriculture and the Mechanic Arts was an institution not conspicuously present

there or easy to find. But it was there all the same, planted in the affections of its few friends and destined in due time to grow into prominence among its fellows.

This primal condition of this institution is in strong contrast with that of today, possessed as it now is with its many acres of land, its eight spacious and convenient structures, its annual income of some \$60,000, increased from time to time by liberal appropriations from the state treasury and to be still further enlarged, seven years hence, by that of the Thompson fund, now amounting to over \$600,000 and increasing at a rate to make it nearly \$800,000 (\$797,181.67) when it shall become available; its faculty of 23 able professors and instructors and its present roll of 130 students. This present condition manifestly indicates progress in agricultural and mechanical knowledge in New Hampshire during the last generation. How many students have been enrolled in its classes during this period or how many have graduated with the honors of its diploma I am unable to say, but I know that the number has been a large one, making an important contribution to the citizenship of the communities to which these graduates have been attracted.

Indeed, this college, like a city on a hill, stands upon its elevation in the sight of thousands who pass it every day—a synonym for progress in the sciences of agriculture and the mechanic arts, an efficient instructor of the students gathered within walls and a silent representative of the great interests which it seeks to promote.

And yet, let me say in passing, it is not the only witness of scientific progress along the lines for which it stands; nor is it the only proof of advancement in the arts which it was established to further. Your speaker has been for many years conversant with the operations of a New Hampshire farm, which affords a fair sample of many within the state. On it, two or three years after this college was established, there was put in operation a mowing machine for the first time to the unfriendly wonderment of

the men engaged to cut its grass by scythes. This machine, with a cutter bar two feet long, mowed an acre in two hours. Last summer the same fields were mown by two machines with cutter bars of six feet each at the rate of an acre in 20 minutes or in 40 when only one was used. Subsequently the mown grass was tedded and raked by a machine constructed for these two purposes. Still later, when fit for the barn, the hay was loaded by a third in less than half the time required to load it in the usual way by hand.

As further evidence of agricultural progress, on this same farm, at planting, corn was formerly dropped in the hills by one man, phosphated by a second and covered by a third. The same work is now done by a planter as fast as an ordinary horse can walk. In harvesting, the top stalks were formerly cut by hand, bound and stooked. Later, when the ears had ripened, the butt stalks, cut off at the ground, were carted to the barn where the ears were removed and husked. This year eight acres were cut and bound in bundles ready for stooking in 12 hours, a period easily reducible to 10.

I do not cite these examples, which may be gathered in different parts of the state, as extraordinary, but as common instances of improvement in agricultural practice. They could be easily multiplied along other lines of our New Hampshire husbandry. Indeed, along all of them, during the last 40 years, experience and observation have taught the farmer very important facts which he will do well to heed.

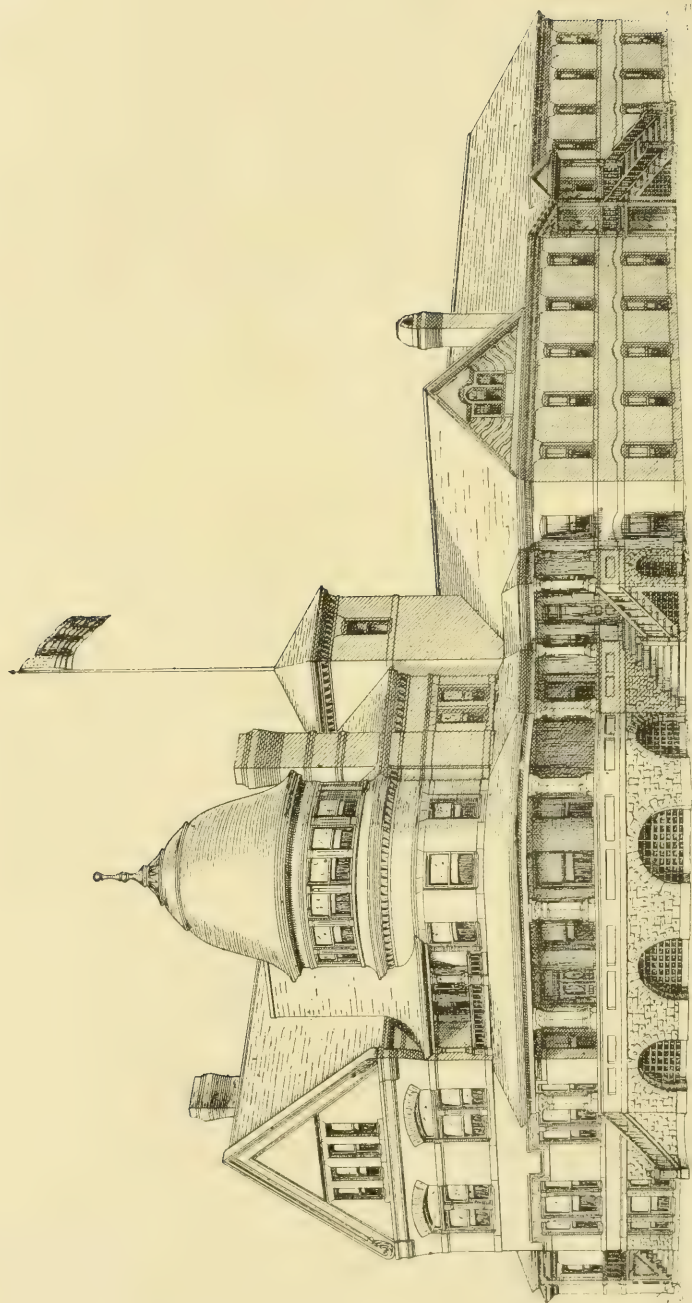
No one can realize more fully than does your speaker the paucity of these statements of the progress of applied science in agriculture and mechanic arts during the life of this institution. But they suffice to show commendable advancement in both. Precisely how much the mechanic arts in New Hampshire are indebted to this college for its labors in their behalf I am not prepared to say. But, as a farmer and a member of the Board of Agriculture, I should consider it base to stand here and not acknowledge

our great obligations for the timely and very valuable aid we and our constituents have received from its officers and professors.

The American farmer moves upon a higher plane than did his predecessors of ancient times. Hæsioid, in his "Works and Days," and Virgil, in his "Eclogues and Georgics," give us pleasing pictures of agricultural life in their remote times, but their farmers were Greek and Roman peasants. Interesting also is the quaint doggerel in which old Thomas Tusser describes the life of the English farmers in the reign of Elizabeth, but they were tenants only under a manorial lord of the lands they occupied. The true American farmer of today is an intelligent citizen as well as farmer, holding by fee simple the farm he tills, whose acres extend downward to the earth's center and outward to infinity.

Mr. President, I recall with much interest the fact that your institution and the New Hampshire Board of Agriculture started upon their respective careers at about the same time, entering futures impenetrable to human vision. For a period both walked more by faith than by sight. I recall with very deep interest some of the early efforts of your college, sustained but faintly by the sympathy of those whom it especially sought to benefit. I remember how it plodded on over untraced paths until increased light dawned upon its way. In time, however, its efforts were crowned with achievements of much importance to the avocations it was organized to benefit.

I esteem it therefore a duty as well as a great pleasure, Mr. President, just here and now, in behalf of my associates and myself, to congratulate your college and its officers upon its firm foundation, its past success and its expanding opportunities of useful service. We mean it when we say to its representatives, Hail! God speed your beneficent work! If at any time the Board of Agriculture can aid you in your high endeavors, call upon us.



NEW HAMPSHIRE SOLDIERS' HOME.

EIGHTH REPORT

OF THE

BOARD OF MANAGERS

OF THE

NEW HAMPSHIRE SOLDIERS' HOME

FOR THE YEARS

1903 AND 1904.

VOLUME I - - PART VIII.

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REPORT.

STATE OF NEW HAMPSHIRE.

SOLDIERS' HOME.

TILTON, N. H., December, 1904.

To the Honorable Senate and House of Representatives:

In compliance with law, the Board of Managers of the New Hampshire Soldiers' Home submit to the legislature this their eighth biennial report.

This Home has now been in operation nearly fifteen years, and during that time has cared for five hundred and twenty-one veteran soldiers, who, in the language of its original charter, "were unable to earn a livelihood and had no adequate means of support." Of this number one hundred and thirty-one have died while members of the Home, and seventy-seven are now on the roll of its members.

In previous biennial reports the managers have from time to time made full report of its management, and discussed fully the various questions of discipline, culinary, sanitary, and medical arrangements, pensions and finances, as they have arisen. The state has from the beginning made liberal provision for its support, and with commendable generosity and charity sustained the managers and officers of the Home in the rules and measures which they have found necessary for the maintenance of order and the accomplishment of the purposes for which the Home was established. The managers have not at all times escaped criticism, nor could they expect to in the conduct of a public institution, touching the welfare of so

many persons in whom the community has such a deep and sympathetic interest, as they feel in the veteran soldiers of a war which ended forty years ago. But, keeping steadily in view their own obligations and the objects of the institution, the managers feel that they have good reason to congratulate themselves that no substantial abuses have developed; good order and discipline have been uniformly maintained; good health and freedom from epidemic disease have prevailed, and the Home has been a source of much comfort and happiness to many men and their families.

Those who manage the Home ask no exemption from investigation and surveillance, realizing that public institutions should be open at all times to fair inspection and public judgment.

Up to January 1, 1903, four hundred and seventy-nine men in the aggregate had been received into the Home.

During the years 1903 and 1904 forty-two others have been admitted, and of the whole number of five hundred and twenty-one a considerable number have been discharged, generally at their own request, and some of them subsequently readmitted.

Number now in actual attendance	77
Average number in attendance in 1903	71
Average number in attendance in 1904	63
Smallest number in attendance in 1903	61
Largest number in attendance in 1903	83
Smallest number in attendance in 1904	50
Largest number in attendance in 1904	86
Average age of members when admitted in 1903 and 1904	66
Average age of present members	66
Age of oldest man in Home	89
Age of youngest man in Home	57
Average annual cost per capita of maintenance from 1891 to 1902, inclusive	\$212.37

Average cost per capita of maintenance in 1903	. \$288.01
Average cost per capita of maintenance in 1904	. 268.59
Average cost of ration from 1891 to 1902, inclusive	22.60 cts.
Average cost of ration in 1891	. . . 26.00 cts.
Average cost of ration in 1904	. . . 26.00 cts.

Previous reports exhibit descriptive lists of all the members of the Home up to January 1, 1903.

A repetition of all the names of previous members seems to be unnecessary; but we append a descriptive list of those who were members of the Home on January 1, 1903, and of those who have been admitted or readmitted since that time, those who are now members being designated by an asterisk.

DEATHS FROM JANUARY 1, 1903, TO JANUARY 1, 1905.

1. ALSON A. LOTHROP, age 64. Co. H, 39th Mass. Entered the Home August 21, 1896. Died January 4, 1903, apoplexy. Buried in Home lot.
2. WILLIAM H. THORNING, aged 64. Co. A, 2d N. H. Entered the Home August 20, 1902. Died January 11, 1903, softening of brain. Buried in Keene, N. H.
3. NATHANIEL FOLSOM, JR., age 80. Co. G, 12th N. H. Entered the Home January 27, 1903. Died April 10, 1903, chronic cystitis. Buried in Gilford, N. H.
4. GEORGE F. SMALL, age 59. Co. B, 11th N. H. Entered the Home December 30, 1902. Died April 21, 1903, senile gangrene. Buried in Sandown, N. H.
5. NATHANIEL BREW, age 86. Marine Corps Mexican War. Entered the Home October 14, 1902. Died in Portsmouth, N. H., May 20, 1903, while absent with leave. Buried in Portsmouth, N. H.
6. PATRICK CREAN, age 61. Co. D, 9th N. H. Entered the Home March 14, 1902. Discharged September 3, 1902, his request. Readmitted January 17, 1903. Died October 13, 1903, pneumonia. Buried in Home lot.

7. JAMES MORAN, age 69. U. S. Navy. Entered the Home May 28, 1901. Died in Portsmouth, N. H., October 15, 1903, while absent with leave. Buried in Portsmouth, N. H.
8. JOHN G. STEVENS, age 81. Co. H, 1st Vt. Cavalry. Entered the Home August 11, 1902. Died October 24, 1903, softening of brain. Buried in Claremont, N. H.
9. ICHABOD H. THORSTON, age 66. Co. F, 2d N. H. Entered the Home November 22, 1903. Died November 29, 1903, acute alcoholism. Buried in Gilford, N. H.
10. JOSEPH RICHARDSON, age 78. Co. H, 2d N. H. Entered the Home January 7, 1895. Died December 7, 1903, softening of brain. Buried in Manchester, N. H.
11. AMOS C. DICKERMAN, age 57. Co. E, 1st N. H. H. A. Entered the Home October 28, 1903. Died January 2, 1904, apoplexy. Buried in Loudon, N. H.
12. DANIEL DANIELSON, age 73. Co. K, 16th N. H. and U. S. Navy. Entered the Home December 10, 1903. Discharged December 20, 1903, his request. Readmitted January 17, 1904. Died January 26, 1904, edema from varicose veins. Buried at Portsmouth, N. H.
13. BRADBURY B. WITHAM, age 72. Co. A, 9th N. H. Entered the Home December 2, 1902. Died February 28, 1904, spinal myelitis. Buried in Home lot.
14. ALBERT WOODBURY, age 81. Co. I, 14th N. H. Entered the Home January 8, 1903. Died March 18, 1904, softening of brain. Buried in Bradford, N. H.
15. JOHN S. HARDY, age 81. Co. B, 12th Vt. Entered the Home October 14, 1903. Died March 27, 1904, softening of brain. Buried in Enfield, N. H.
16. ALFRED E. THOMAS, age 62. Co. B, 17th Me. Entered the Home March 18, 1904. Died May 4, 1904, dermatitis exfoliativa. Buried in North Fryeburg, Me.

17. PROCTOR COLLINS, age 76. Co. H, 2d N. H. Entered the Home November 17, 1903. Died May 7, 1904, pneumonia. Buried in Miller's Falls, Mass.
18. WALTER S. CRAFTS, age 65. 2d Mass. Sharpshooters. Entered the Home October 30, 1902. Died May 13, 1904, blood poisoning. Buried in Portsmouth, N. H.
19. LEONARD C. CHENEY, age 63. Co. K, 8th Vt. Entered the Home January 26, 1897. Discharged April 1, 1897, his request. Readmitted November 12, 1901. Died in Laconia, N. H., May 20, 1904, while absent with leave. Buried in Barnard, Vt.
20. CHARLES G. HORNEY, age 78. Co. I, 15th N. H. Entered the Home August 8, 1892. Discharged January 22, 1898, his request. Readmitted September 25, 1899. Died June 22, 1904, paresis. Buried in Rochester, N. H.
21. WILLIAM W. DODGE, age 64. Co. H, 16th Vt. Entered the Home November 5, 1903. Died July 4, 1904, nervous prostration. Buried in Claremont, N. H.
22. ZEBADIAH SARGENT, age 84. Co. H, 6th N. H. Entered the Home April 9, 1902. Died July 10, 1904, softening of brain. Buried in Rochester, N. H.
23. JOSEPH STONE, age 72. Co. D, 7th N. H. Entered the Home July 12, 1904. Died August 4, 1904, apoplexy. Buried in Deerfield Centre, N. H.
24. JONATHAN WADSWORTH, age 70. Co. A, 8th N. H. Entered the Home November 14, 1898. Discharged December 6, 1898, his request. Readmitted January 20, 1901. Discharged March 5, 1901, his request. Readmitted November 18, 1903. Discharged April 6, 1904, his request. Readmitted May 12, 1904. Died September 16, 1904, apoplexy. Buried in Boston, Mass.
25. JOSEPH CARTER, age 73. Co. B, 9th N. H. Entered the Home October 19, 1900. Died September 27, 1904, spinal myelitis. Buried in Home lot.

26. JOHN G. LANGDON, age 77. Co. H, 9th U. S. I., Mexican War. Entered the Home May 19, 1892. Discharged August 2, 1895, his request. Readmitted July 15, 1899. Discharged April 29, 1900, his request. Readmitted October 7, 1902. Died December 13, 1904, pneumonia. Buried in Haverhill, Mass.

We submit the following:

REPORT OF THE COMMANDANT.

NEW HAMPSHIRE SOLDIERS' HOME,

TILTON, N. H., January 1, 1905.

Col. Daniel Hall, Secretary Board of Managers, New Hampshire Soldiers' Home:

SIR:—I have the honor to submit the eighth report of this Home, from January 1, 1903, to January 1, 1905.

Number present January 1, 1903	77
Number absent with leave	0
Number admitted during two years	44
Number readmitted	50
Number present January 1, 1905	67
Number discharged at their own request	54
Number discharged for drunkenness	16
Number discharged after violating pension rules	10
Number discharged for refusing to perform detail	1
Number dropped,—away over sixty days	2
Number died	26
Average number in attendance, 1903	71
Average number in attendance, 1904	63
Smallest number in attendance, 1903	61
Largest number in attendance, 1903	83
Smallest number in attendance, 1904	50
Largest number in attendance, 1904	86
Age of oldest man in Home	89
Age of youngest man in Home	57
Average age of members when admitted in 1903-04	66

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Average age of present members	66
Average cost per capita of maintenance in 1903 . .	\$288.01
Average cost per capita of maintenance in 1904 . .	268.59

Whole number cared for since the Home was opened, December 6, 1890, 521, of whom four served in the Mexican war, two in both Mexican and Civil wars, 505 in Civil war, twelve in Spanish-American war, and one who served in both Civil and Spanish wars. Whole number of deaths, 131.

EMPLOYED AT THE HOME.

Commandant	1	Laundress	1
Matron	1	Seamstress	1
Office clerk	1	Cooks	2
Farm superintendent . .	1	House girls	5
Hospital steward	1		

OCCUPATION OF MEMBERS ON PAY ROLL.

Firemen	2	Laundryman	1
Cooks' assistants	4	Barn man	1
Assistants in hospital . .	2		

Nurses detailed as required.

BILL OF FARE FOR WEEK ENDING DECEMBER 11, 1904.

(GENERAL DINING HALL.)

MONDAY.

Breakfast. Oatmeal, baked potatoes, corned beef, biscuit, bread, butter, crackers, tea, coffee, milk.

Dinner. Boiled potatoes, New England boiled dinner, bread, butter, apple pie, crackers, tea, coffee, milk.

Supper. Warmed beans, bread, butter, cranberry sauce, cake, crackers, tea, milk.

TUESDAY.

Breakfast. Oatmeal, baked potatoes, bacon, bread, butter, doughnuts, tea, coffee, milk.

Dinner. Boiled potatoes, roast beef and gravy, onions, bread, butter, corn starch pudding, crackers, tea, coffee, milk.

Supper. Meat hash, apple sauce, bread, butter, layer cake, crackers, tea, milk.

WEDNESDAY.

Breakfast. Oatmeal, baked potatoes, cold roast beef and gravy, corn cake, bread, butter, crackers, tea, coffee, milk.

Dinner. Boiled potatoes, fried liver, squash, bread, butter, apple pie, crackers, tea, coffee, milk.

Supper. Fried potatoes, bread, butter, boiled cider apple sauce, cheese, sponge cake, crackers, tea, milk.

THURSDAY.

Breakfast. Oatmeal, baked potatoes, fricasseed beef, bread, butter, doughnuts, crackers, tea, coffee, milk.

Dinner. Baked beans, brown and white bread, butter, picalilli, bread pudding, crackers, tea, coffee, milk.

Supper. Meat hash, bread, butter, gingerbread, apple sauce, crackers, tea, milk.

FRIDAY.

Breakfast. Oatmeal, baked potatoes, creamed codfish, biscuit, bread, butter, crackers, tea, coffee, milk.

Dinner. Boiled potatoes, fried fish, pickled beets, bread, butter, apple pie, crackers, tea, coffee, milk.

Supper. Warmed fish, bread, butter, apple sauce, cake, ginger cookies, crackers, tea, milk.

SATURDAY.

Breakfast. Oatmeal, baked potatoes, corned beef, hot muffins, bread, butter, crackers, tea, coffee, milk.

Dinner. Boiled potatoes, roast pork and gravy, boiled onions, mashed turnip, bread, butter, tapioca pudding, tea, coffee, milk.

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Supper. Fried potatoes, bread, butter, cranberry sauce, cake, crackers, tea, milk.

SUNDAY.

Breakfast. Oatmeal, meat hash, bread, butter, doughnuts, crackers, tea, coffee, milk.

Dinner. Baked beans, brown bread, white bread, butter, sweet pickle, meat pie, crackers, tea, coffee, milk.

Supper. Fish hash, bread, butter, cheese, cake, cookies, apple sauce, tea, milk.

The hospital bill of fare is regulated for the sick by the hospital steward, as occasion requires.

HOSPITAL.

Nearly one half of our men are now in the hospital, either sick themselves or taking care of those who are. At the present time we have no extreme cases, but many paralyzed and several demented men, who require constant care. We have a resident hospital steward, and our original system, by which the fairly well men take care of the sick, still prevails. Every effort has been made to reduce hospital expenses so far as possible, and our monthly drug bills have now reached a minimum. Each year finds the men more feeble, and this must necessarily increase as the years go by.

Dr. C. R. Gould still holds the position of home surgeon, and is very faithful in the performance of his duties.

FARM.

Not being in physical condition to perform labor in the field myself, and lacking farm help for the work, it was deemed advisable to forego cultivating a garden for the season of 1903, and the only seed planted was oats and grass seed on a two-acre plot, from which was harvested 119 bushels of oats besides getting a good catch from the herds-grass and clover. From

the small garden north of the buildings an ample supply of asparagus, rhubarb, and currants were gathered in their season. Apples were a failure, as less than five barrels were picked, and those of poor quality.

During the season just passed one acre was cultivated to potatoes and another to cabbage, beets, beans, carrots, corn, cucumbers, dandelions, lettuce, peas, parsnips, radishes, squashes, and tomatoes. All of these vegetables thrived under the care of hired labor, yielding a year's supply in abundance. We harvested 271½ bushels of table and 15 bushels of small potatoes: not a large yield, but they are of excellent quality. The asparagus, currants, and rhubarb amply paid for the care they received.

Two hundred and thirty-seven barrels of No. 1 apples were picked from the trees, and 190 bushels of other qualities were made into boiled cider or saved for vinegar, besides 60 bushels, which were blown off by the wind just before picking and kept for cooking purposes, and 210 bushels secured and stored away for our cows, horses, and hogs.

During the two years covered by this report 5,488 pounds of pork were dressed. This pork has been or is being consumed at the Home.

The quantity of milk obtained from our cows during the same time was 26,280 quarts.

STOCK ON HAND.

- 1 horse, "Clipper," 14 years old.
- 1 horse, "Kittie," 10 years old.
- 4 cows in milk.
- 2 cows fresh next April.
- 1 heifer, 1 year old.
- 1 veal, four weeks old.
- 1 Berkshire boar, 17 months old.
- 3 Chesterwhite brood sows.

20 swine from ten weeks to nine months old, for winter and late spring pork.

With home team and tools, more attention paid to cultivation, and barn enlarged, hay and grain could be grown sufficient to keep the number of cows to furnish all milk used and also forage for stock on our twenty-eight acre farm.

A place for storing vegetables and apples, away from steam heat and frost, would add much to their keeping quality.

WATER.

On receipt of instructions from the Board of Managers at their regular meeting in August, 1903, steps were at once taken to procure and lay the necessary iron pipe to convey water from terminus of the Tilton and Northfield Aqueduct Companies' system, at driveway between the old farmhouse and north end of west brick wing, to all the Home buildings, and also to five hydrants. The six and eight-inch pipe came direct from the manufacturers, through the hands of the Aqueduct Co., at a cost of \$32.75 for six-inch and \$30.25 for eight-inch, per ton of 2,000 pounds, delivered at railway station here. Hydrants, fittings, lead, and oakum were purchased of Greenwood & Crockett without profit to them. This firm laid the pipe, making connections with hydrants and buildings. Superintendent Keasor of the Aqueduct Co. loaned the use of his gang of shovelers, with tools, for labor of digging, for which the men received \$1.75 per day of ten hours.

The pipe was placed 5 8-12 feet below the surface. Starting from the water companies' pipe 48 feet of 8-inch was connected to 852 feet of 6-inch pipe, which reached round the brick building and returns into the 8-inch pipe near the starting point. This pipe was tapped with a 4-inch pipe at southeast and northwest corners of brick building, and conducts water to the system of piping in the Home. The water pressure with hydrants closed is 40 lbs. to the square inch. With



HOSPITAL OF NEW HAMPSHIRE SOLDIERS' HOME.

one $\frac{3}{4}$ -inch nozzle open it is 30 lbs. With two 1-inch and one $\frac{3}{4}$ -inch nozzles open the pressure is 20 lbs.

The aggregate cost of the job, including 300 feet of $2\frac{1}{2}$ -inch fire hose, with nozzles and winter protection for hydrants, was \$1,546.41 as per itemized bill forwarded at completion of work. The sum is about \$400.00 less than engineers, who surveyed and furnished estimates of cost, figured. Either our farm superintendent, W. H. Hill, or myself were on line of work all of the time, looking after details.

IMPROVEMENTS.

In order to prevent water from leaking through the valleys and lower edges of the hospital roof of southern exposure, tin twenty-eight inches wide was laid in November, 1903, at an expense of \$159.06, as per detailed bills rendered at that time.

In October, 1903, the ice pond was cleared of mud and stumps at a cost of \$40.70.

In compliance with instructions paint stock was purchased sufficient to paint outside of hospital and trimmings of brick building with two coats, beside necessary painting inside. After some of the inside painting had been completed and all of the hospital had been painted one coat, and a part of it with two, on account of the prospective lack of funds, the work was stopped. Expense, \$161.31.

Inside repairs and extra painting has cost \$125.90.

A new roof on barn shed cost \$37.43. Lumber and shingles to the extent of \$56.81 are on hand for various repairs.

Water supply, with 300 feet hose and nozzles . . .	\$1,516.41
5 winter coverings for hydrants	30.00
	<hr/>
	\$1,546.41
Tin valleys and edges on hospital roof	159.06
Cleaning out ice pond	40.70
Painting all outside of hospital one coat, and a part of it two	161.31

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Inside repairs and painting	\$125.90
Repairing barn shed by constructing new roof	37.43
	<hr/>
	\$2,070.81

This considers all improvements except some minor repairs that are classed with household expenses.

RELIGIOUS SERVICES.

During the two years Rev. W. S. Emery, rector of Trinity church, has held services here the first Sabbath in every month, and Rev. C. C. Sampson, pastor of the Congregational church, the third Sabbath. The Christian Endeavor and Junior Christian Endeavor Societies have also held frequent services during the time. These services have been entirely voluntary and much appreciated.

On May 24, 1903, a Memorial service was held in the chapel, under the auspices of Charles F. Smith Post, No. 33, G. A. R., at which Rev. Mr. Emery preached an able sermon, and music was furnished by a quartet from the seminary. Later in the year, however, the Post surrendered its charter, and was disbanded, so that no memorial service was held in 1904.

All of the Tilton ministers have responded most willingly when called upon in case of illness or death of any of our members.

LIBRARY.

Our library contains about 1,400 bound volumes and a large number of periodicals of all descriptions. The following named papers have been sent gratuitously by the publishers, who have the thanks of all connected with the Home.

Concord Monitor (daily), *Independent Statesman*, *Concord Tribune*, Concord.

Mirror and American (daily), *Mirror and Farmer*, Manchester.

Portsmouth *Times* (daily), Portsmouth *Herald*, Portsmouth *Daily Chronicle*, N. H. *Gazette*, Portsmouth.

Foster's *Weekly Democrat*, Dover.

Laconia *Democrat*, The *News and Critic*, Laconia.

The *Journal-Transcript*, Franklin Falls.

Nashua *Telegraph* (daily), Nashua *Press* (daily), Nashua.

Rochester *Courier*, Rochester.

The Exeter *News Letter*, Exeter.

The *Pilot*, Boston, Mass.

The *Independent*, Salmon Falls.

The Peterborough *Transcript*, Peterborough.

The *Valley Times*, Pittsfield.

Canaan *Reporter*, Canaan.

Weekly Enterprise, Bristol.

Ashland *Citizen*, Ashland.

Plymouth *Record*, Plymouth.

Congressional Record, Washington, D. C.

The *Republic-Journal*, Littleton.

Somersworth *Free Press*, Somersworth.

Haverhill *Gazette*, Haverhill, Mass.

VISITORS.

1903.

February 6. A delegation of nearly one hundred members of the legislature inspected and dined at the Home.

June 14. A party of twenty ladies from W. R. C., No. 24, spent the day here.

1904.

June 14. Twenty-seven ladies from W. R. C., No. 24, spent the day here.

July 27. A party of fourteen ladies from W. R. C., No. 4, were here for the day.

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We were officially inspected by Gen. N. M. Curtis, A. I. G. N. H. D. V. S., on March 26 and September 8, 1903, and June 7, 1904, and by Gen. John T. Richards on September 1, 1904.

CONTRIBUTIONS.

1903.

January. Donation, W. R. C., West Derry; donation, W. R. C., McIndoe's Falls, Vt.; box books, W. R. C., No. 5, Milford; donation, W. R. C., No. 8, Ashland.

February. Donation, W. R. C., No. 39, Lancaster.

March. Box magazines, Mrs. Emma Perry, North Weare.

May. Box magazines, Frank J. Pillsbury, Concord; box magazines, Mrs. Dearborn, Milford.

September. Package magazines, L. H. Morrill, Tilton; check for \$3.00, W. R. C., No. 74, Hollis; check for \$2.00, W. R. C., No. 33, Winchester; check for \$1.00, W. R. C., No. 78, Chester; check for \$3.00, W. R. C., No. 17, Manchester.

October. Six bedspreads, W. R. C., No. 84, Bradford.

December. Donation, W. R. C., West Concord; two rugs, W. R. C., Portsmouth; Christmas box books, jellies, etc., W. R. C., No. 62, Lebanon; Christmas box books, jellies, etc., W. R. C., No. 84, Bradford; Christmas box books, jellies, etc., W. R. C., No. 57, Somersworth.

1904.

January. Box books, Mrs. Louise Johnson, Manchester; album quilt, W. R. C., No. 24, Concord.

February. History of 7th N. H. Regiment, Jeremiah E. Curry, Tilton.

March. Donation, W. R. C., No. 1, Laconia.

April. Shade trees, Senator J. H. Gallinger, Concord.

May. Plant, W. R. C., No. 24, Concord.

July. Donation, W. R. C., No. 14, Lakeport; picture, Col. Henry O. Kent, Lancaster.

August. Picture, Col. W. S. Carter, Lebanon; donation. W. R. C., No. 8, Ashland; rug, W. R. C., No. 8, Ashland; rug, W. R. C., No. 62, Lebanon; rug, Joseph Freschl W. R. C., No. 69, West Manchester.

September. Box magazines, W. R. C., No. 32, Hinsdale; Frank Leslie's "Illustrated History of the Civil War," W. R. C., No. 10, Claremont.

October. Plants, Joseph Eastman, Melrose, Mass.; papers, Miss Addie Morse, Tilton.

November. Box supplies for hospital, E. Florence Barker Tent, D. of V., Concord, N. H.; picture, Maj. D. E. Proctor, Wilton; box reading matter, W. R. C., No. 58, Alton; box reading matter, D. H. Reed, Fitzwilliam.

December. Christmas boxes, containing canned fruits, jellies, candy, tobacco, bedding, etc., were received from the following corps: W. R. C., No. 11, North Haverhill; W. R. C., No. 47, Milton; W. R. C., No. 27, Littleton; W. R. C., No. 69, West Manchester; W. R. C., No. 74, Hollis; W. R. C., No. 81, Enfield; W. R. C., No. 24, Concord; W. R. C., No. 4, Pittsfield; W. R. C., No. 9, Plymouth; W. R. C., No. 62, Lebanon; W. R. C., No. 14, Lakeport; W. R. C., No. 85, Antrim; W. R. C., No. 5, Milford; W. R. C., No. 84, Bradford; W. R. C., Alton; W. R. C., Winchester.

In closing I wish to thank the Board of Managers, in behalf of Mrs. Smith and myself, for the many thoughtful acts shown us during these two years, as well as during the fourteen years of our relations together.

Your kindness to us during so much ill health has made us deeply grateful to you all.

Respectfully submitted,

E. H. SMITH,

Commandant.

DISCIPLINE.

At its last session our legislature made a radical change in the laws of the state relating to the sale of intoxicating liquors. The introduction of the license system was not and is not by us regarded as conducive to temperance habits on the part of our members. Under the law, the town of Tilton in 1903 voted in favor of license, and this led to the setting up of several saloons in the village, and to a much more lax oversight of the sale by hotels and drug stores. When the Soldiers' Home was located in Tilton it was agreed by the responsible citizens, and not objected to by any, that no sale of intoxicants should be allowed in the town. The force of this agreement, and the sanction of the prohibitory law, and the facilities for its enforcement had greatly minimized the usual evils of the open saloon, and enabled us to conduct the Home with a substantial exemption from intemperance. The vote of the town for license was a disappointment to us, and to meet its increased liabilities we immediately adopted more stringent regulations touching the movements of the members, restricting their freedom to leave the Home, by prescribing passes from the commandant to enable them to visit the town, and prohibiting them altogether from frequenting saloons. These regulations, although necessitating some trouble and vigilance in their enforcement, have operated satisfactorily, and the officers of the Home have carried out the rules, and the members have obeyed them, certainly as well as we could have anticipated.

The open saloon in the town has led to some, but not very great disorder and trouble at the Home; but the town at its annual meeting in 1904 reversed its action of the previous year, and voted against license by an overwhelming majority. Under this vote we have a right to expect and do expect that there will be no open places of resort for obtaining intoxicating drinks and that our situation hereafter will be correspondingly improved.

This evil, and the disposition of a very few members to refuse to perform even any small detail of service, such as they are abundantly able to do, are practically the only obstacles we ever have to contend with in the way of discipline; but our members are generally orderly and submissive to reasonable rules, and we still maintain that we have a Home as temperate and well regulated in every respect as any in the United States.

PENSIONS.

At the last session congress enacted a new pension law, so far as it concerns the relations of the members of the Soldiers' Homes, depriving the Homes of all such benefit as they had before derived from the pensions of members. This new law went into effect July 1, 1904, and under it, as administered by the United States authorities, while all pensions come into the hands of the Home, the Home realizes no advantage, and no increase of its funds therefrom. Each pension member receives his pension, but is required to turn it over to the managers of the Home, either assigned to wife, child, or parent, or to be repaid to him as he needs it, or can receive it without detriment to himself or the Home, or be retained by the Home for him whenever he is discharged, or kept and paid over to his heirs at his decease.

Thus, as long as this law is unchanged, the Home can receive no benefit or profit from the pensions of members. In the past we have been enabled to realize through pensions an addition to our funds of about \$3,000 per year, which has been used for the general support of the Home, while we have turned over to soldiers and their families some \$3,000 per year out of the same fund. Of course the change in the pension system will necessitate a corresponding increase of the state appropriation for the support of the Home.

This change in the law in regard to the disposition of pensions, while it entails very considerable labor and care in its

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administration, and deprives us of substantial revenue, does not, in our opinion, inure to the benefit of the pensioner, or his family, as families will get less than before, and the pensions paid to the soldiers will not generally be to their advantage, and, in many cases, will be decidedly injurious. We believe that the administration of this system will develop so many evils and inconveniences that congress will soon find it advisable to place the matter upon a different basis.

Since the New Hampshire Home was organized about \$40,000 has been paid to pensioners and their families, and \$28,921.84 has been retained by the management and added to the state fund for maintenance, only one half of which has been available for the Home since it had to be shared equally with the general government.

During the last two years \$10,466.00 has been paid to pensioners and their families, and \$6,225.05 retained by us and paid into the funds of the Home. This revenue to the Home ceased July 1, 1904, thus depriving us of about \$1,000 of anticipated revenue, and necessitating a rigid economy of expenditures, and a check to some improvements which we were contemplating if our funds had warranted them.

Number of pensioners now in the Home, 53.

FINANCIAL STATEMENT.

The following is a statement of the receipts and expenditures of the Home for the two years since our last report, viz., from January 1, 1903, to January 1, 1905:

AVAILABLE FUNDS.

Unexpended balance at the disposal of the board of managers January 1, 1903	\$1,188.51
Appropriation made in March, 1903	22,500.00
Special appropriation for water supply, made March 13, 1903	3,000.00

REPORT OF NEW HAMPSHIRE SOLDIERS' HOME. 277

Amount received by the state from the United States, in aid of the support of disabled soldiers and sailors, since January 1, 1903	\$10,704.92
Pensions retained for the use of the Home, from January 1, 1903, to July 1, 1904	5,530.45
Total	<u>\$42,923.88</u>

DISBURSEMENTS.

Paid out on all accounts, in and for the year 1903	\$24,025.95
Paid out on all accounts, in and for the year 1904	17,849.09
Total	<u>\$41,875.04</u>
Balance unexpended and subject to the call of the board	\$1,048.84
The entire cost of maintenance, therefore, including extraordinary, as well as ordinary, improvements and additions to plant for two years past, is	\$41,875.04
Of this sum there has been received from the United States government	\$10,704.92
From pensions	5,530.45
	<u>\$16,235.37</u>

Showing that the entire cost to the state of the maintenance of the Home from January 1, 1903, to January 1, 1905, including all improvements and additions, has been \$25,639.67

Excluding permanent improvements and additions, the cost has been \$23,568.86, or \$175.00 per annum for each man supported.

The average cost from 1891 to 1904, inclusive, was \$218.50 per capita.

ESTIMATES.

Previous to the last session we had repeatedly called the attention of the legislature to the absolute necessity, for fire purposes especially, of an increased supply of water at the Home. We had made some experiments without solving the problem, and at that session the matter was again pressed upon the attention of the committees on the Soldiers' Home in both houses. We had hearings before them on the subject, and a careful consideration by them and ourselves of several more or less feasible methods of accomplishing the object. At one of these hearings the agents of the Tilton and Northfield Aqueduct Co. appeared with us, and made a proposition for the laying of a larger pipe from Tilton village to the Home, and furnishing us water at a stipulated rental. Upon full consideration, it was thought best by us, with the approbation of the legislature, to accept this proposition. Consequently the matter was concluded by the appropriation of \$3,000 to enable us to comply with our part of the contract. This appropriation was made March 13, 1903, to enable us to secure an additional supply of water for the use of the Home, and the act gave us authority to expend any surplus for repairs and the general purposes of the Home.

Accordingly, on the twentieth of March, 1903, we made a contract with the Aqueduct Company aforesaid to lay an eight-inch pipe from their main in the village to the Home, and to deliver to us there a supply of water for \$575 a year, the company guaranteeing that there should always be a pressure of at least thirty-five pounds at the point of delivery at the Home. We agreed on our part to furnish and lay the pipe from the highway opposite the Home into and about the buildings, and furnish the hydrants. The company proceeded to perform the work, and completed it, and began to furnish us with water about July 1, 1903. We have had this supply since, which has been ample for domestic and laundry purposes; but its

adequacy for fire purposes is somewhat doubtful, inasmuch as its power when turned on to throw several streams upon the buildings at the proper elevation is somewhat disappointing.

We expended for this purpose, for piping, excavations, hydrants, hose, nozzles, and winter coverings, the sum of \$1,546.-41.

We have also expended for painting and other repairs \$534.40, and should have done more this year in that direction had our resources warranted it.

The expenditures during the two years for permanent improvements and additions to plant are therefore represented by this sum, viz., \$2,070.81.

Considerable repairs are now needed in and about the premises by way of painting inside and outside, renewal of some furniture, concreting, etc.

MEMORANDA.

In considering the wants of the institution at the hands of the state, we ask the legislature to bear in mind,

1. The greatly enhanced cost of food and all other supplies we have to purchase.

2. The advanced age and ever-increasing sickness and feebleness of the veterans, requiring constantly larger expenditures for hospital treatment, medicines, medical attendance, and nursing. We can rely very little now and hereafter upon nursing and care of the men for each other.

3. The depletion of our means, produced as we have above explained, by the change in the laws touching pensions.

We should not have been able to meet our expenditures without a deficit during the last two years, but for a considerable falling off in our numbers during the past year. Whether this diminution of our membership is to be permanent or progressive, and we are to have a smaller population at the Home than in former years is problematical; but for various reasons we are of opinion that a smaller number than

we have now in attendance cannot be counted upon for several years to come.

Taking all the foregoing suggestions into consideration, we estimate that, including our small balance in the treasury, and our regular payments from the general government the sum of twenty-five thousand dollars (\$25,000.00) will be required for the maintenance of the Home and ordinary expenses of buildings and grounds for the next two years; and we recommend the appropriation of that sum.

COMMANDANT AND MATRON.

Captain and Mrs. E. H. Smith have continued their services as commandant and matron up to this time, completing a continuous incumbency of upwards of fourteen years. So long a stewardship indicates faithful and satisfactory work on their part, and we deem it a matter of good fortune to the state and to us, as responsible managers of this institution, that we have been able to command for so long a period services of so much value.

SURGEONS.

Dr. Charles R. Gould has acted as surgeon of the Home since 1901, and, together with Dr. J. M. Cheney and Dr. G. P. Conn, consulting surgeons, who have been occasionally called in, have ministered to the wants and relieved the pains of the veteran soldiers with such skill and fidelity as to earn their gratitude and the appreciation of the Board of Managers.

BOARD OF MANAGERS.

The following changes have occurred in the Board of Managers:

On January 8, 1903, Gov. Nahum J. Bachelder became a member of the board *ex officio*, and has since acted in that capacity.

In April, 1903, Col. Edward E. Parker, by virtue of his office as Commander of the Grand Army of the Republic, succeeded Capt. Alanson C. Haines *ex officio*, and served up to April, 1904.

In October, 1903, at the expiration of his term, Col. Marcus M. Collis was reappointed for a term of five years.

In April, 1904, Col. Henry O. Kent succeeded Col. E. E. Parker as department commander of the Grand Army of the Republic, and has from that time acted *ex officio* as a member of the board.

In October, 1904, at the expiration of his term, Col. Thomas P. Cheney was reappointed for a term of five years.

CONCLUSION.

We respectfully invite the legislature to visit the Home during its session, and examine it in all respects; and we would particularly suggest a thorough inquiry into the supply of food, and the personal treatment of the members of the Home, and all details of the management as affecting their comfort, happiness, and contentment.

Respectfully submitted,

NAHUM J. BACHELDER, *ex officio*, *Chairman*,

DANIEL HALL, *Secretary*,

HENRY O. KENT,

THOMAS P. CHENEY,

MARCUS M. COLLIS,

CHARLES W. STEVENS,

M. L. MORRISON,

Board of Managers, N. H. Soldiers' Home.

SOLDIERS' HOMES.

NATIONAL HOMES.

- Central.—Col. J. B. Thomas, governor. Montgomery county, Ohio.
- Northwestern.—Capt. C. Wheeler, governor. Milwaukee county, Wisconsin.
- Eastern.—Col. S. H. Allen, governor. Togus, Maine.
- Southern.—Maj. William Thompson, governor. Elizabeth City county, Virginia.
- Western.—Maj. J. G. Rowland, governor. Leavenworth county, Kansas.
- Pacific.—Col. O. H. Lagrange, governor. Los Angeles county, California.
- Marion.—Capt. J. H. Chapman, governor. Grant county, Indiana.
- Danville.—Col. Isaac Clements, governor. Danville, Ill.
- United States Soldiers' Home (for Regulars).—Brig.-Gen. Geo. D. Ruggles, governor. Washington, D. C.

STATE HOMES.

- California.—George W. Watts, commandant. Napa county.
- Colorado.—S. M. French, commandant. Monte Vista.
- Connecticut.—Capt. James N. Coe, superintendent. Noroton.
- Idaho.—H. L. Chamberlain, commandant. Boise.
- Illinois.—Capt. William Somerville, superintendent. Quincy.
- Indiana.—R. M. Durock, commandant. Lafayette.
- Iowa.—Capt. C. C. Horton, commandant. Marshalltown.
- Kansas.—Col. S. H. Thomas, commandant. Fort Dodge.
- Massachusetts.—Charles D. Nash, acting superintendent. Chelsea.

- Massachusetts (Naval).—Lieut. John Downs, superintendent. Quincy.
- Michigan.—Col. Geo. E. Judd, commandant. Grand Rapids.
- Minnesota.—Capt. James Compton, commandant. Minnehaha.
- Missouri.—R. P. Goodall, superintendent. St. James.
- Montana.—Capt. J. R. Hillman, commandant. Columbia Falls.
- Nebraska.—Capt. J. M. Fowler, commandant. Milford.
- New Hampshire.—Capt. Ervin H. Smith, commandant. Tilton.
- New Jersey.—Maj. Peter F. Rogers, superintendent. Kearney.
- New York.—Joseph E. Ewett, superintendent. Bath.
- New York Sailors' Snug Harbor.—Capt. George W. Brown, agent. Nassau street, New York City.
- New York.—Mrs. Ellen Putnam, superintendent. Oxford.
- North Dakota.—Col. W. W. McIlvain, commandant. Lisbon.
- Ohio.—Gen. A. M. Anderson, superintendent. Sandusky.
- Oregon.—William J. Shipley, commandant. Roseburg.
- Pennsylvania.—Col. R. S. Cullom, commandant. Erie.
- Rhode Island.—Capt. Benj. L. Hall, commandant. Bristol.
- South Dakota.—Col. William V. Lucas, commandant. Hot Springs.
- Vermont.—Col. Thomas Hannon, superintendent. Bennington.
- Washington.—J. M. Carson, commandant. Orting.
- Wisconsin.—Capt. Chas. J. Ellis, superintendent. Waupaca.
- Wyoming.—Maj. F. A. Stitzer, commandant. Cheyenne.

DESCRIPTIVE LIST.

DESCRIPTIVE LIST OF MEMBERS OF THE HOME FROM

NAME.	Company and regiment.	Rank.	Length of ser- vice in mos.	Nativity.	Age.	Pension Per month.
Addison, John	D, 14 N. H.	Private ...	34	Canada	54	\$12.60
Alton, George A.*	K, 2 N. H.	"	36	N. H.	50	6.00
Armstrong, Francis	A, 5 N. H.	Sergeant..	22	Mass.	56	6.00
Bailey, Robert*	B, 10 N. H.	"	33	Ireland	60	8.00
Bean, Charles	C, 1 N. H. H. A.	Private ...	9	N. H.	61	10.00
Bemis, Arvin C	G, 5 N. H.	"	24	Vermont... 52	52	6.00
	B, 1 N. H. Cav..		14			
Bemis, Charles R.*	B, 5 N. H.	"	10	N. H.	72	6.00
Brackett, Sylvanus P.*	U. S. Navy		36	Maine.	50	12.00
Brady, James	F, 10 N. H.	Private ...	24	Mass	49	.....
Brew, Nathaniel	Ma. C. (Mex. W.)	Private ...	52	Ireland	85	8.00
Brown, Hollace J.*	G, 5 N. H.	Corporal..	18	N. H.	65	10.00
Carey, Edmond G.*	H, 34 Mass.	Private ...	34	Ireland	54	12.00
Carr, William	K, 11 N. H.	"	11	N. H.	60	6.00
Carter, Joseph	B, 9 N. H.	"	9	Ireland	69	8.00
Chalifoux, Vital	G, 96 N. Y.	"	12	Canada	66	10.00
Champan, Joseph*	F, 7 Vt	"	40	Canada	49	16.00
Chase, Alonzo	H, 2 N. H.	"	23	N. H.	66	14.00
Cheney, Leonard C	K, 8 Vt	"	18	Vermont... 56	56	8.00
Cilley, Benjamin F.	I, 7 N. H.	"	36	Vermont... 73	73	6.00
Cilley, George W.	H, 1 N. H.	"	3	N. H.	71	10.00
Codman, George B	H, 11 N. H.	"	36	N. H.	61	8.00
Colbath, Charles A.*	A, 7 N. H.	"	23	N. H.	72	12.00
Collins, Proctor	H, 2 N. H.	"	37	N. H.	76	12.00
Connor, John	F, 10 N. H.	"	27	Ireland	54	6.00

* Member at present.

JANUARY 1, 1903, TO DECEMBER 31, 1904, INCLUSIVE.

Disability.	Admitted from.	Occupation.	Married, single, or widowed.	When admitted.	Status.
Rheumatism	N. H.	Laborer	S.	June 4, 1894	Dis. Sept. 18, 1903. Summarily.
Wounds	"	Weaver	"	Feb. 10, 1904	" May 22, 1904. Summarily.
Rheumatism	Mass.	Laborer	"	Sept. 7, 1902	" April 11, 1903. Viola. pen. [rules.]
General debility	N. H.	"	"	July 11, 1903	Dropped Nov. 6, 1903.
Heart disease	"	Shoemaker.	M.	May 9, 1898	Dis. June 10, '03. Summarily.
G. S. W. right leg	Vt.	Laborer	S.	Mar. 28, 1895	Dropped Oct. 22, 1895.
				Oct. 17, 1898	Dis. July 29, '99. His request.
				Feb. 17, 1903	" Aug. 26, '02. "
Old age	N. H.	"	W.	April 8, 1903	" April 14, '02. "
Hernia	"	Confection'r	M.	Jan. 28, 1892	" June 1, '92. "
				Dec. 13, 1897	Drop'd Aug. 13, '00. "
				Jan. 3, 1901	Dis. May 3, '01. "
				Oct. 2, 1901	Dropped June 22, 1902.
				Jan. 15, 1903	Dis. July 17, '03. His request.
				Dec. 25, 1903	" Mar. 21, '04. Drunken's.
Rheumatism	N. H.	Laborer	S.	Nov. 5, 1904	"
				Oct. 6, 1893	Dropped April 8, 1894.
				May 16, 1894	Dis. June 23, '94. His request.
				June 5, 1895	" June 13, '96. "
				Jan. 1, 1898	" Aug. 5, '98. Insobor't'n.
				Oct. 19, 1899	" Aug. 26, '00. Drunken's.
				Sept. 7, 1902	" Dec. 3, 1903. "
				Oct. 4, 1903	" May 5, '04. His request.
Old age	N. H.	Laborer	W.	Oct. 14, 1902	Died since leaving the Home.
General debility	"	Farmer	"	Aug. 28, 1900	Died in Portsmouth, May 20, '03, while absent with leave.
Varicose veins	"	Spinner	M.	Dec. 21, 1904	Dis. Dec. 10, '03. Drunken's.
Piles	"	Sailor	S.	June 1, 1900	"
				Aug. 4, 1898	" Sept. 29, '99. His request.
				Jan. 20, 1900	" May 19, '00. "
				June 23, 1900	Dropped Aug. 13, 1901.
				5, 1902	Dis. June 10, '03. His request.
G. S. W. left foot.	Mass.	Gardner	M.	Oct. 28, 1903	" Apr. 6, '04. Viola. pen. r.
G. S. W. right arm [and side]	N. H.	Laborer	"	Jan. 19, 1900	Died Sept. 27, 1904.
				Jan. 22, 1895	Dis. Feb. 2, '95. His request.
				9, 1902	" Feb. 27, '02. "
G. S. W. in jaw	"	Blacksmith.	W.	Feb. 25, 1903	" May 4, '03. "
				Jan. 4, 1896	" Nov. 10, '98. "
				May 26, 1903	"
Chronic diarrhea	"	Laborer	"	16, 1901	" Dec. 2, '03. "
Lumbago	"	Carpenter	M.	Jan. 26, 1897	" April 1, '97. "
				Nov. 12, 1901	Died in Laconia May 20, '04, while absent with leave.
Rupture	"	Farmer	S.	13, 1900	Dis. Oct. 6, '04. Viola. pen. r.
Heart trouble	N. Y.	Toolmaker.	M.	July 16, 1904	" July 27, '04. His request.
					Died since leaving the home.
Rheumatism	N. H.	Carrier	"	Oct. 19, 1900	Dis. Aug. 14, '04. Summarily.
Rheumatism	"	Accountant.	W.	Feb. 26, 1901	"
Old age	Mass.	Rail'r'd man	M.	Nov. 17, 1903	Died May 7, 1904.
G. S. W. left hand	"	Laborer	"	May 21, 1895	Dropped Jan. 11, 1896.
				Aug. 21, 1896	Dis. Apr. 2, '97. His request.
				26, 1897	" Dec. 14, '97. Insobor't'n.
				April 27, 1899	" Dec. 3, '02. Summarily.
				Dec. 6, 1903	" April 29, '04. "

DESCRIPTIVE LIST OF MEMBERS OF THE HOME FROM

NAME.	Company and regiment.	Rank.	Length of service in mos.	Nativity.	Age.	Pension per month.
Cotter, Daniel.....	L, 1 Md. Cav....	Private...	31	R. I.	47	\$12.00
Crafts, Walter S.....	2 Mass. Sharp...	"	23	Mass.....	63	6.00
Cram, Frank P.*.....	E, Sharpshoot's.	Sergeant...	30	N. H.....	60	6.00
	D, 1 N. H. Cav...	2d Lieut...	14			
	L, 1 N. H. Cav...	Captain...				
Crean, Patrick.....	D, 9 N. H.	Private...	35	Ireland....	66	6.00
Cross, Charles R.....	G, 1 N. H.	"	4	N. H.....	74	12.00
	G, 1 N. E. Cav...		31			
Crowley, John*.....	C, 2 N. H.	"	6	P. E. I.....	56	....
Curry, Jeremiah E.*.....	E, 7 N. H.	"	36	N. H.....	65	12.00
	Mexican war...					
Danielson, Daniel.....	U. S. Navy		24	"	73	12.00
	K, 16 N. H.		10			
Danielson, Nathaniel*.....	K, 2 N. H.	"	55	"	50	.....
Danielson, William*.....	H, 2 Mass. H. A.	"	12	"	47	8.00
Darling, James P.*.....	E, 5 N. H.	"	37	"	67	6.00
Davis, Nathaniel W.*.....	F, 4 U. S. A.....	"	36	"	56	10.00
	F, 19 U. S. A.....	"	36			
	U. S. M. A. D. Cav.	"	60			
Dickerman, Amos C.....	E, N. H. H. A.	"	10	"	57	17.00
Dodge, William W.....	H, 16 Vt.....	"	34	"	64	12.00
Downs, Albert F.*.....	D, 1 N. H. H. A..	"	10	"	55	6.00
Dudley, Charles.....	F, 23 Mass.....	"	16	Vermont...	64	12.00
Duffy, Nicholas*.....	G, 2 N. H.	"	51	Ireland....	50	.....
Durgin, Charles P.....	E, 1 N. H. S. W. V.	"	4	N. H.....	29	.....
Durrell, Gardner C.*.....	H, 12 N. H.	"	12	"	52	8.00
Emerson, Richard H.*.....	I, 1 N. H. H. A.	"	10	"	63	8.00
Emerson, Thomas W.*.....	F, 9 N. H.	"	35	"	61	.....
Finchon, John.....	D, 9 Vt.....	"	36	Mass.....	64	6.00
Flynn, William.....	I, 2 Mass. Cav...	"	29	N. H.....	60	12.00
Fogg, James M.....	D, 6 N. H.	Sergeant...	45	"	65	8.00
Folsom, Nathaniel W.....	G, 12 N. H.	Private...	7	"	80	17.00
Foss, Drew*.....	I, 7 N. H.	"	37	"	70	6.00
Fowler, Eugene A.....	H, 8 Mass.....	"	16	"	51	.....
Furbush, Edward B.*.....	I, 20 Mass.....	"	5	Maine.....	68	17.00

JANUARY 1, 1903, TO DECEMBER 31, 1904, INCLUSIVE.— *Continued.*

Disability.	Admitted from.	Occupation.	Married, single, or widowed.	When admitted.	Status.
G. S. W.	N. H.	Laborer.	M.	Aug. 29, 1891	Dropped March 13, 1892.
				July 17, 1893	Dis. Mar. 13, '94. Viola. pen. r.
				Aug. 14, 1895	" March 4, 1899. "
				July 13, 1899	" Feb. 3, 1903. His request.
Old age	"	Machinist.	W.	Oct. 30, 1902	" May 13, 1904.
Rupture	Mass.	Farmer.	"	Jan. 15, 1901	"
Malaria.	N. H.	Laborer.	"	Mar. 14, 1902	Dis. Sept. 3, '02. His request.
General debility.	"	Iron molder.	"	Jan. 17, 1903	Died Oct. 13, 1903.
"	U. S.	Seaman.	S.	Oct. 11, 1895	" Apr. 16, '96. His request.
				Nov. 5, 1896	" Jan. 6, '97. "
				Feb. 18, 1904	" Apr. 7, '04. "
				Sept. 2, 1904	"
Old age	N. H.	Farmer.	W.	May 15, 1893	" May 30, '95. "
				July 3, 1896	" Nov. 26, '96. "
				Jan. 17, 1898	" Nov. 18, '98. "
				9, 1902	"
Dropsy	"	Blacksmith.	M.	Dec. 10, 1903	" Dec. 20, '03. "
Heart disease	"	Seaman.	S.	Jan. 17, 1904	Died Jan. 26, 1904.
				Dec. 22, 1891	Dropped June 20, 1892.
				Aug. 12, 1895	" Oct. 11, 1899.
				21, 1900	"
"	"	Laborer.	W.	Dec. 5, 1891	" Aug. 2, 1892.
				May 17, 1897	Dis. Dec. 28, '01. His request.
				Jan. 21, 1902	"
Old age.	"	"	"	Nov. 23, 1904	"
Heart trouble.	"	Teamster.	M.	Mar. 2, 1899	" March 23, '02. "
				Aug. 23, 1904	"
General debility.	"	Laborer.	W.	Oct. 28, 1903	Died Jan. 2, 1904.
Paralysis	"	Butcher.	S.	Nov. 5, 1903	" July 4, 1904.
Rheumatism	"	Shoemaker.	W.	Jan. 14, 1902	Dis. April 16, '02. His request.
				July 13, 1902	"
General debility.	"	Laborer.	"	Jan. 8, 1904	" June 15, '04. "
			S.	6, 1891	"
Varicose veins.	"	"	M.	Dec. 25, 1903	" Jan. 26, '04. "
G. S. W. near spine.	Ill.	Horseman.	S.	June 24, 1896	" Feb. 6, '99. "
		[maker		25, 1903	"
General debility.	N. H.	Harness.	M.	July 10, 1904	"
Rheumatism	"	Farmer.	S.	Dec. 25, 1904	"
Malaria.	"	Laborer.	W.	Aug. 19, 1903	" March 8, '04. "
Rheumatism	"	Driller.	M.	Apr. 11, 1902	" April 16, '02. "
				13, 1904	" April 23, '04. "
G. S. W.	"	Carpenter.	S.	Jan. 11, 1896	" Jan. 31, '96. "
				July 24, 1903	" July 29, '03. "
				Feb. 2, 1904	" June 12, '04. "
					Died since leaving the home.
Old age	"	Farmer.	S.	Jan. 27, 1903	" April 10, 1903.
Rheumatism	"	Mason.	M.	Oct. 11, 1900	Dis. Mar. 2, '01. His request.
				Nov. 13, 1904	"
Kidney trouble	"	Mechanic.	S.	Feb. 22, 1897	Dis. Aug. 13, '01. Drunken's.
				Oct. 2, 1901	" March 27, '03. "
Double rupture	"	Farmer.	W.	Dec. 20, 1901	" June 2, '02. His request.
				Oct. 31, 1902	" May 31, '03. "
				4, 1903	" June 8, '04. "
				Sept. 14, 1904	"

DESCRIPTIVE LIST OF MEMBERS OF THE HOME FROM

NAME.	Company and regiment.	Rank.	Length of service in mos.	Nativity.	Age.	Pension per month.
Gamsbey, Harvey D.....	G, 2 Sharpsh't's.	Private ...	8	N. H.	65	\$12.00
	E, 15 Vermont...	" ...	11			
	42 Wisconsin ...	" ...	12			
Gerrish, Charles F.*.....	E, 13 N. H.	" ...	34	" ...	73	8.00
Gilman, Thomas E.*.....	F, 17 Mass.	" ...	12	Mass ...	68	12.00
	D, 13 N. H.	" ...	21			
Gordon, George	F, 9 N. H.	" ...	36	Vermont...	54	12.00
Gray, Benjamin F.....	U. S. Navy		60	N. H.	63	8.00
Green, John	" "		15	England ...	60	6.00
Guyon, Alexander.....	A, 5 N. H.	" ...	10	France ...	60	12.00
Hale, Jones S.*.....	C, 24 Mass.	" ...	36	Vermont...	71	12.00
Haley, James *.....	B, 17 N. H.	" ...	6	" ...	57	6.00
Hall, Oliver P.	D, 12 N. H.	" ...	32	N. H.	60	8.00
Hardy, John S.	B, 12 Vermont...	" ...	36	" ...	81	17.00
Himes, Sylvester E.*	A, 1 N. H. H. A.	" ...	13	Vermont...	68	12.00
Horney, Albert	C, 1 N. H. Cav...	" ...	15	N. H.	46	6.00
Horney, Charles G.....	I, 15 N. H.	" ...	11	" ...	65	12.00
Hough, George W.*.....	I, 10 N. H.	" ...	32	" ...	71	10.00
Hutchins, James S.*.....	A, 10 N. H.	" ...	34	" ...	60	8.00
Jefferson, Taylor *.....	I, 6 N. H.	" ...	7	" ...	73	10.00
Johnson, Augustus H.*.....	F, 3 N. H.	" ...	2	" ...	75	12.00
	B, 10 N. H.	" ...	40			
Johnson, Gilman	K, 5 N. H.	Sergeant...	45	" ...	51	6.00
Jones, Frank L.	A, 1 N. H. S. W. V.	Private ...	5	Ohio ...	43	6.00
	L, 6 U. S. Inf't...	" ...	9			
Kennison, Seth.....	D, 9 N. H.	" ...	33	N. H.	82	12.00
Kent, John.....	K, 14 N. H.	" ...	35	" ...	79	12.00
Kettelle, George M.*.....	D, 3 Mass.	" ...	3	Mass ...	67	8.00
	C, 25 Mass.	" ...	37			
Kimball, Henry.....	E, 7 N. H.	" ...	38	N. H.	60	10.00
Langdon, John G.	H, U. S. Mex.	" ...	16	" ...	65	12.00
	[War.					
Lee, Charles H.*	F, 4 N. H.	" ...	36	Virginia ...	73	12.00
	I, 18 N. H.	" ...	5			
Leonard, John *.....	K, 12 N. H.	" ...	5	New York...	53	6.00
	U. S. Navy	" ...	12			
Lothrop, Alson A.	H, 39 Mass.	Private ...	34	Maine.....	58	6.00
Lovejoy, Diab *.....	A, 18 N. H.	" ...	9	N. H.	56	12.00
Lynch, James *.....	G, 7 N. H.	" ...	11	Mass ...	48	6.00

JANUARY 1, 1903, TO DECEMBER 31, 1904, INCLUSIVE.— *Continued.*

Disability.	Admitted from.	Occupation.	Married, single, or widowed.	When admitted.	Status.
Heart disease	Vt.	Farmer	W.	Oct. 24, 1902	Dis. Feb. 27, 1903. His request.
Old age	N. H.	"	"	June 16, 1897	
Wounds	"	R. R. cond'r	M.	Feb. 16, 1900	Dropped Aug. 11, 1900.
				Dec. 12, 1902	
Rheumatism	"	Printer	S.	Feb. 4, 1896	Dis. Apr. 10, '97. Insubor'n.
				April 13, 1897	" July 4, '98. Viola. pen. r.
				July 19, 1902	" Jan. 13, '04. Summarily.
General debility	"	Laborer	W.	Dec. 15, 1903	" Feb. 11, '04. His request.
Hernia	"	Mariner	S.	Sept. 24, 1902	" Apr. 14, '03. "
Loss of left eye	N. Y.	Laborer	M.	Mar. 1, 1901	" Nov. 15, '01. "
				July 5, 1902	" Mar. 3, '03. "
Loss of right leg	N. H.	Farmer	S.	Jan. 13, 1904	
Rheumatism	"	Fishman	W.	Aug. 13, 1894	" Mar. 3, '00. "
				Jan. 18, 1901	" Mar. 2, '02. "
				July 12, 1902	
Wounds	Mich.	Farmer	M.	Dec. 9, 1903	" Mar. 3, '04. "
Old age	N. H.	Laborer	"	Oct. 14, 1903	Died Mar. 27, '04.
General debility	"	Painter	W.	Oct. 31, 1902	Dis. Nov. 24, '02. His request.
				Nov. 22, 1903	" Apr. 6, '04. Viola. pen. r.
				Nov. 1, 1904	
Piles	"	Shoe cutter	S.	Oct. 23, 1891	Dropped April 9, 1892.
				Aug. 21, 1892	Dis. Mar. 21, '98. His request.
				July 19, 1898	" Sept. 21, '03. Drunken's.
Heart trouble	"	"	W.	Aug. 8, 1892	" Jan. 22, '98. His request.
				Sept. 25, 1899	Died June 22, 1904.
Deafness	Mass.	Machinist	M.	Oct. 6, 1904	
General debility	N. H.	Laborer	W.	April 14, 1891	Dis. Nov. 27, '00. His request.
				May 10, 1901	" Sept. 25, '02. Viola. pen. r.
				Oct. 25, 1904	
Old age	"	"	S.	May 18, 1896	" Feb. 8, '99. His request.
"	"	Farmer	W.	April 1, 1899	
				Jan. 17, 1902	
Rheumatism	"	Laborer	S.	Dec. 11, 1895	Trans. to N. H. St. Hospital.
					Died there July 25, 1904
General debility	"	Butter mak.	"	Jan. 15, 1901	Dis. Apr. 24, '02. His request.
				July 18, 1902	" Apr. 2, '03. "
				Jan. 8, 1904	" Apr. 6, '04. "
Old age	"	Farmer	W.	Oct. 17, 1902	" Aug. 31, '04. "
"	"	"	S.	April 17, 1903	" May 9, '03. "
General debility	"	Bookb'per	"	Dec. 25, 1902	
Malaria	Vt.	Mason	W.	Oct. 24, 1902	" Feb. 27, '03. "
Defective eyes	Mass.	Shoemaker	"	May 19, 1892	" Aug. 2, '95. "
				July 15, 1899	" April 29, '00. "
				Oct. 7, 1902	Died Dec. 13, 1904.
Wounds	"	Butcher	M.	Sept. 6, 1904	
Rheumatism	"	Cook	S.	Dec. 19, 1896	Dis. Feb. 18, '92. Summarily.
				Mar. 18, 1902	" May 5, '03. His request.
				Sept. 15, 1903	" June 21, '04. "
				Oct. 5, 1904	
Rheumatism	N. H.	Mechanic	"	Aug. 21, 1896	Died Jan. 4, 1903.
Spinal trouble	Va.	Farmer	M.	July 25, 1903	
Rheumatism	Mass.	Bricklayer	S.	Dec. 18, 1894	Dis. May 1, '95. His request.
				Oct. 17, 1895	" Apr. 7, '97. Viola. pen. r.
				July 9, 1903	

DESCRIPTIVE LIST OF MEMBERS OF THE HOME FROM

NAME.	Company and regiment.	Rank.	Length of service in mos.	Nativity.	Age.	Pension per month.
Martin, Addison S.*	B, 2 N. H.	Private	34	N. H.	72	\$12.00
Matthews, Heman O.*	I, 11 N. H.	"	33	Vermont.	57	
Matthews, Thomas *	U. S. Navy.		20	Ireland	58	12.00
McArdle, Joseph	" "		12	England	49	6.00
McCame, Thomas F.*	K, 9 N. H.	Private	10	Ireland.	58	6.00
McGilvery, George F.	C, 11 N. H.	"	32	N. H.	60	6.00
McIntire, Daniel H.*	K, 13 N. H.	"	34	Maine.	69	12.00
Meagher, James	K, 8 N. H.	Sergeant	48	Ireland	49	6.00
Mendum, John *	D, 3 N. H.	Private	13	N. H.	72	6.00
Meserve, Lewis W.	I, 10 N. H.	Private	16			
Moran, James	F, 9 N. H.	"	10	"	56	8.00
	U. S. Navy		13	England	67	12.00
Morey, Alfred B.	E, 10 N. H.	Private	35	N. H.	54	12.00
Morey, Frank	H, 11 N. H.	"	33	"	61	12.00
Morrison, Ira W.	F, 15 N. H.	"	11	"	85	12.00
Memdelein, Joseph *	L, 1 N. Y. Eng.	"	2	N. Y.	61	17.00
	U. S. M. C.					
Munsey, Joseph C.	H, 14 N. H.	Private	36	N. H.	58	8.00
Neely, Benjamin *	D, 98 N. Y.	"	11	Canada	69	8.00
Nichols, George W.*	C, 13 N. H.	"	14	N. H.	68	12.00
Northrop, Azor*	H, 16 Mass.	"		Vermont.	64	12.00
Odiorne, John E.	U. S. Navy.	"	36	N. H.	64	
Parker, DeWitt C.	H, 1 N. H. H. A.	"	10	"	53	6.00
Parmenter, George *	I, 22 Mass.	"	16	Mass.	86	12.00
Paul, Sidney N.*	G, 18 N. H.	Sergeant	7	N. H.	50	6.00
	B, 30 U. S. Inf.		36			
	B, 4 U. S. Inf.		60			
	K, 15 U. S. Inf.		60			
Peel, John T.	36, U.S.V.S.W.V.	Private	41	England	32	
Pickering, Levi.	K, 7 N. H.	"	36	N. H.	75	12.00
Poor, Eri Jr*	A, 7 N. H.	1st Sergt.	47	"	72	12.00
Prescott, Charles L.*	K, 1 N. H. Cav.	Private	44	"	62	6.00
Prince, Jerome *	H, 15 Mass.	"	9	R. I.	61	6.00
	E, 42 Mass.	"	11			
	D, 3 N. H.	"	25			
Putney, John F.*	I, 5 N. H.	"	14	N. H.	50	6.00
	L, N. H. H. A.	"	25			

JANUARY 1, 1903, TO DECEMBER 31, 1904. INCLUSIVE.— *Continued.*

Disability.	Admitted from.	Occupation.	Married, single, or widowed.	When admitted.	Status.
Rheumatism.....	N. H.	Farmer.....	W.	July 22, 1898 Nov. 25, 1900 Aug. 1, 1903 Oct. 1, 1904	Dis. Apr. 24, '99. His request. " Feb. 8, '02. " " June 14, '04. Viola. pen.r.
General debility.....	"	Laster.....	S.	April 10, 1900	"
"	"	Plumber....	W.	Oct. 8, 1901 Nov. 14, 1903 3, 1904	" June 10, '03. His request. " Oct. 7, '04. Summarily.
Heart disease.....	"	Wool scou'r.	S.	July 23, 1894 May 19, 1896 Feb. 9, 1898 Dec. 1, 1898 2, 1900 Jan. 3, 1904	" Sept. 18, '94. His request. " Jan. 19, '97. " " May 3, '98. " " Oct. 11, '99. " " Jan. 25, '01. " " April 30, '04. "
Kidney trouble.....	Mass.	Mill operat.	W.	Oct. 20, 1904	"
G. S. W. in leg.....	N. H.	Lumberm'n	M.	July 15, 1903	" April 5, '04. "
Rheumatism.....	"	Farmer.....	S.	Feb. 7, 1903 April 15, 1903 Nov. 4, 1904	" April 8, 1903. " " Sept. 14, '03. Viola. pen.r
Wound left side.....	Mass.	Mule spin'r.	M.	Aug. 25, 1893 9, 1902 Mar. 1, 1903	" Nov. 5, '93. His request " Aug. 13, '02. " " May 18, '03. "
G. S. W. right hip....	N. H.	Farmer.....	W.	Feb. 10, 1900 Nov. 22, 1904	Dropped July 30, 1900.
General debility.....	"	Shoemaker.	"	Oct. 3, 1902	Dis. Dec. 12, '03. Summarily.
Varicose veins.....	"	Laborer....	M.	May 28, 1901	Died in Portsmouth, Oct. 15, '03, while absent with leave.
Heart disease.....	"	Farmer.....	W.	July 6, 1894	Dis. Nov. 11, '03. Summarily.
G. S. W. right hand..	"	Laborer....	"	Dec. 3, 1901	" Mar. 20, '04. Drunken's.
Old age.....	"	Cooper.....	"	Oct. 30, 1903	" Mar. 29 '04. His request.
General debility.....	"	Laborer....	"	Feb. 20, 1904	"
Lead poisoning.....	Mont'a	"	S.	July 21, 1898 Sept. 6, 1899 Jan. 22, 1904	" Sept. 14, '98. His request. " Feb. 18, '00. " " Mar. 5, '04. "
General debility.....	N. H.	"	W.	Dec. 19, 1903	"
Rupture.....	"	Shoemaker.	M.	19, 1899	"
Deafness.....	"	Laborer....	"	July 12, 1904	"
Heart trouble.....	"	Fireman....	"	June 17, 1903	" June 26, '03. His request.
Locomotor ataxia...	"	Mech'l Eng.	"	May 15, 1902	" Sept. 15, '03. "
Old age.....	"	Farmer....	"	July 12, 1901	Dropped August 31, 1902.
Rheumatism.....	Mass.	Machinist..	S.	Sept. 23, 1902 Nov. 25, 1902 Mar. 4, 1892 Oct. 23, 1904	Dis. Oct. 27, '02. Viola. pen. r. " May 10, '04. Summarily.
Defective eyesight...	N. H.	Wool we'ver	"	June 26, 1902	" Sept. 17, '03. Summarily.
General debility.....	"	Shoemaker.	W.	Aug. 16, 1903	" Sept. 20, '03. Daughter's
Rheumatism.....	"	Brickmak'r.	"	Nov. 22, 1897	[request.
"	"	Weaver.....	"	Feb. 13, 1900 July 18, 1902 Aug. 27, 1904	" Mar. 4, '02. His request. " Feb. 25, '04. "
Paralysis.....	Mass.	Mechanic....	M.	Jan. 29, 1903	"
Malarial poisoning..	N. H.	Photogra'r.	"	Nov. 11, 1897 Jan. 25, 1899 20, 1902 17, 1903 Nov. 11, 1903 Aug. 25, 1904	" May 4, '98. His request. " April 6, '99. " " April 6, '02. " " Mar. 27, '03. " " April 29, '04. "

DESCRIPTIVE LIST OF MEMBERS OF THE HOME FROM

NAME.	Company and regiment.	Rank.	Length of service in mos.	Nativity.	Age.	Pension per month.
Quinn, Michael *	I, 3 N. H.	Private ..	8	Ireland	60	\$12.00
Randall, Noah M.*	C, 1 N. H. H. A.	Corporal...	10	N. H.	66	8.00
Reves, Joseph	A, 9 N. H.	Private....	17	Vermont ...	50	
Richardson, Joseph	II, 2 N. H.	Sergeant...	37	Canada	70	12.00
Rowe, William C	II, 1 N. H. S. W. V.	Private ...	5	N. H.	23	
Russell, Thomas J.*	I, 20 Mass.	"	23	Mass	58	
	M, 2 H. A.	"	11			6.00
Ryan, David T	B, 1 N. H.	"	3	N. H.	66	
Sanborn, Sidney F.*	C, 53 N. Y.	"	2	"	43	
	A, N. H. S. M.	"	2			
Sargent, Zebadiah.	H, 6 N. H.	"	19	"	82	12.00
Savage, Michael *	C, 8 "	"	39	Ireland	61	8.00
Shaw, Alonzo W.*	D, 5 "	"	14	N. H.	62	8.00
	K, N. H. H. A.	"	9			
Sias, John	M, 1 N. H. S. W. V.	"	3	Mass.	31	
Simpson, Mark W	A, 1 N. H. H. A.	"	28	N. H.	58	8.00
	I, 3 Art.					
Slate, Lyman J.*	H, 18 N. H.	"	4	Mass	77	8.00
Small, George F	B, 11 "	"	34	N. H.	59	6.00
Smith, Norman C.*	D, 6 "	"	12	"	43	8.00
Smith, Thomas B.*	K, 3 "	"	14	"	49	12.00
Snell, Seth *	F, 7 "	"	36	Mass	70	12.00
	I, 18 "	"	4			
Spinney, William	U. S. Navy		36	"	66	12.00
Stevens, John G.	H, 1 Vt. Cav.	"	21	N. H.	80	16.00
Stevens, William, Jr.*	B, 48 Mass.	"	13	Mass	69	8.00
Stone, Joseph	D, 7 N. H.	"	31	Canada	72	12.00
Sullivan, Stephen *	25 Maine	"	1	Mass	49	
Tarbell, Myal *	G, 9 N. H.	"	2	N. H.	57	
Thomas, Alfred E.	B, 17 Me.	"	6	"	62	8.00
Thornin, William H.	A, 2 N. H.	"	36	"	64	12.00
Thurston, Ichabod H.	F, 2 "	"	24	"	66	6.00
Tighe, Philip *	B, 10 "	"	15	Mass	65	14.00
Trickey, George W.*	I, 15 "	"	12	N. H.	62	10.00
	V. R. C.	"	11			
Vaughan, Edwin *	U. S. Navy	"	37	Mass	61	

REPORT OF NEW HAMPSHIRE SOLDIERS' HOME.

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JANUARY 1, 1903, TO DECEMBER 31, 1904, INCLUSIVE.—Continued.

Disability.	Admitted from.	Occupation.	Married, single, or widowed.	When admitted.	Status.
Rheumatism	N. H.	Laborer	S.	Dec. 7, 1894	Dis. Apr. 7, '99. His request.
"	"	"	"	July 15, 1900	" Dec. 12, '03. Drunken's
"	"	Painter	W.	Oct. 26, 1904	"
"	"	"	S.	July 25, 1895	"
"	"	"	"	Dec. 17, 1891	Dropped August 1, 1895.
"	"	"	"	" 19, 1895	Dis. Apr. 14, '96. His request.
"	"	"	"	" 17, 1896	Dropped Sept. 21, 1897.
"	"	"	"	Jan. 5, 1898	" July 30, 1898.
"	"	"	"	" 11, 1903	" June 13, 1903.
Loss of right leg ..	"	Laborer	S.	" 7, 1895	Died Dec. 7, 1903.
Grippe	"	"	"	" 29, 1901	Dis. Mar. 24, '01. His request.
"	"	"	"	Feb. 11, 1903	" Mar. 27, '03. "
General debility	"	"	W.	June 23, 1898	"
Chronic diarrhea ...	"	Farmer	"	Oct. 4, 1892	Dis. June 10, '93. "
"	"	"	"	May 13, 1895	Dropped April 12, 1897.
"	"	"	"	Mar. 29, 1898	Dis. Aug. 30, '99. His request.
"	"	"	"	Nov. 12, 1901	" Aug. 19, '02. "
"	"	"	"	Oct. 9, 1902	" June 23, '04. "
"	"	"	"	Dec. 6, 1890	"
Malaria	"	Laborer	"	"	"
Old age	"	Shoemaker.	"	Apr. 9, 1902	Died July 10, 1904.
Rheumatism	"	Laborer	M.	" 16, 1891	"
G. S. W.	"	Farmer	S.	Nov. 30, 1895	"
"	"	[cutter.	"	"	"
Urethral stricture ...	"	Outer sole	M.	Jan. 18, 1902	Dis. Mar. 18, '02. His request.
"	"	"	"	Apr. 12, 1903	" May 5, '03. A. W. O. L.
General debility	"	Farmer	W.	" 26, 1903	" May 9, '03. His request.
"	"	"	"	July 23, 1903	" Apr. 27, '04. "
"	"	"	"	" 27, 1904	" Oct. 6, '04. Viola. pen. r.
"	"	Lumberman	"	Mar. 13, 1903	"
Gangrene right foot.	"	Farmer	M.	Dec. 30, 1902	Died April 21, 1903.
Kidney trouble	"	"	"	" 15, 1890	"
Chronic diarrhea	"	"	"	May 19, 1892	Dis. Oct. 8, '96. Viola. pen. r.
"	"	"	"	Aug. 21, 1903	"
Old age	Mass.	Shoemaker.	"	Jan. 23, 1899	" Sept. 14, '01. His request.
"	"	"	"	Apr. 13, 1903	" Apr. 6, '04. "
"	"	"	"	July 23, 1904	"
Kidney trouble	N. H.	Painter	"	Oct. 26, 1899	" June 28, '02. "
"	"	"	"	" 15, 1902	" June 13, '03. Viola. pen. r.
"	"	"	"	Mar. 27, 1904	" Aug. 24, '04. His request.
Old age	"	M'rb'le w'k'r	W.	Aug. 16, 1902	Died Oct. 24, 1903.
Rupture	"	Weaver.	"	Dec. 24, 1904	"
Paralysis	"	Farmer	"	July 12, 1904	" Aug. 4, 1904.
Heart disease	"	Mill laborer.	S.	Oct. 11, 1894	Dis. April 2, '95. His request.
"	"	"	"	July 17, 1896	"
General debility	"	Farmer	M.	Feb. 10, 1891	" Apr. 5, '92. "
"	"	"	"	Nov. 3, 1904	"
Loss use left arm	"	Carpenter...	S.	Mar. 18, 1904	Died May 4, 1903.
Old age	"	Woodw'k'r	M.	Aug. 20, 1902	" Jan. 11, 1903.
Chronic diarrhea	"	Farmer	S.	Nov. 22, 1903	" Nov. 29, 1903.
Failing eyesight	Mass.	Janitor	M.	" 6, 1900	Dis. May 17, '04. Drunken's.
"	"	"	"	Sep. 20, 1904	"
Malaria	N. H.	Laborer	"	Apr. 21, 1899	"
Wound of left hand ..	"	Engineer....	W.	Dec. 19, 1893	" Aug. 14, '94. Summarily.
"	"	"	"	" 14, 1904	"

DESCRIPTIVE LIST OF MEMBERS OF THE HOME FROM

NAME.	Company and regiment.	Rank.	Length of ser- vice in mos.	Nativity.	Age.	Pension per month.
Wadsworth, Jonathan	A, 8 N. H.	Private ...	13	Mass	64	\$8.00
Walker, Alfred	E, 1 Sharpsh'rs.	"	36	N. H.	64	8.00
Walker, Elisa *	K, 8 Mass	"	4	Canada	59	8.00
Warren, Lewis W. *	D, 12 Mass	"	36	N. H.	62	6.00
	U. S. Navy		41			
Wedgewood, Charles E	G, N. H. H. A. ...	"	10	Mass	55	
Wheeler, Francis R.	M, 1 N. H. S. W. V.	"	3	N. H.	48	
Whitney, John T. W. *	I, N. H. H. A. ...	"	10	Canada	81	24.00
Witham, Bradbury B.	A, 9 N. H.	"	15	N. H.	71	12.00
Woodbury, Albert.	I, 14 "	"	35	Maine	80	17.00

JANUARY 1, 1903, TO DECEMBER 31, 1904.— *Continued.*

Disability.	Admitted from.	Occupation.	Married, sin, or widowed.	When admitted.	Status.
Chronic diarrhea	N. H.	Farmer	S.	Nov. 14, 1898 Jan. 20, 1901 Nov. 18, 1903 May 12, 1904	Dis. Dec. 6, '98. His request. " Mar. 5, '01. " " Apr. 6, '04. " Died Sept. 16, 1904.
Chronic catarrh.....	"	Watchm'kr	"	Dec. 3, 1902	Dis. May 19, '03. His request.
Failing eyesight	"	Harness'mkr	M.	Nov. 18, 1904	"
General debility	"	Farmer	W.	Jan. 6, 1903 " 15, 1904 Dec. 3, 1904	" Mar. 12, '03. " " Apr. 3, '04. " " Dec. 2, '03. Summarily.
Rheumatism	"	Barber.....	W.	Nov. 11, 1903	" Jan. 17, '04. His request.
General debility.....	"	Laborer	M.	" 12, 1903	"
Heart disease	"	"	W.	Oct. 21, 1903	"
Paralysis.....	"	Shoemaker.	S.	Dec. 2, 1902	Died Feb. 28, 1904.
Old age	"	Laborer	"	Jan. 8, 1903	" March 18, 1904.







